
Aviation Logistics



U.S. Marine Corps

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FOREWORD

Marine Corps Warfighting Publication (MCWP) 3-21.2, *Aviation Logistics*, establishes the doctrinal basis for the planning and execution of Marine aviation logistics (AVLOG). It provides the philosophy for employing Marine AVLOG in support of the prosecution of war and other operations in support of the Marine Corps' mission as the Nation's expeditionary force in readiness.

Effective AVLOG is the force multiplier of the Marine air-ground task force's (MAGTF's) aviation combat element (ACE). Viable AVLOG support enables the ACE commander to maintain more capable forces in decisive operations longer. Marine AVLOG is an integral part of the MAGTF as it extends the ACE operational reach and flexibility.

This publication is primarily for commanders and staff officers who plan and execute AVLOG. It should be read by all Marines who are supported by or involved in AVLOG. It is also for any other activity requiring an understanding of Marine AVLOG. It provides a common basis for understanding Marine AVLOG and how the MAGTF exploits those capabilities operationally and tactically.

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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AVIATION LOGISTICS

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CHAPTER 1

FUNDAMENTALS

Within the Marine Corps, the Deputy Commandant for Aviation (DC/A) is responsible for planning and coordinating staff activities for all matters relative to organization, equipment, manpower, training, and support of Marine Corps aviation units and installations, including all AVLOG matters. Marine Corps aviation is an integral part of naval aviation and as such, DC/A is dual-hatted as the Chief of Naval Operations (CNO) N782. The DC/A is responsible to the CNO to ensure that Marine Corps aviation is in consonance with the overall Naval Aviation Program. At all levels, ACE commanders and aviation logisticians must plan and execute general logistical operations and aviation-specific (the focus of this publication) logistical operations. These AVLOG operations must sustain the ACE as it provides support to the MAGTF anywhere in the world.

Mission

As a result of United States Code, Title 10, and joint doctrine, the Marine Corps, in coordination with the Navy, has made logistical self-sufficiency an essential element of MAGTF expeditionary warfighting capabilities. This means that the Marine Corps' AVLOG mission, at all command and support levels, is to assist in generating ACEs that are rapidly deployable, self-reliant, self-sustaining, and flexible.

Rapid deployment demands that ACE organizations, equipment, and supplies be readily transportable by land, sea, and air.

A self-reliant ACE is task-organized to support itself logistically with accompanying supplies for specific time frames without undue concern for resupply or developed infrastructure ashore.

An ACE's AVLOG capabilities and accompanying supplies enable it to sustain its own operations for up to 90 days while external resupply channels are organized and established.

An ACE's inherent self-sustainment and rapid deployability capabilities allow it to quickly reconstitute itself and permit rapid withdrawal from a completed operation and immediate reembarkation for follow-on missions.

Aviation Logistics versus Aviation Ground Support

Logistical support of the ACE is more complex than that of the other MAGTF elements because most of the logistical support for the ACE is sourced and funded by the Navy. The ACE must employ two sets of procedures for supply and maintenance operations. Logistical support is provided by units organic to the ACE: the Marine aviation logistics squadron (MALS) and the Marine wing support group/Marine wing support squadron (MWSG/MWSS). The MALS provides AVLOG (aviation-specific support), while the MWSG/MWSS provides aviation ground support (AGS), expeditionary airfield (EAF), aircraft rescue and firefighting (ARFF), etc., and ground-common combat service support (CSS). An additional CSS detachment from the MAGTF's combat service support element can provide ground logistic support beyond the capability of the ACE's organic logistical units. Detailed information about AGS may be found in MCWP 3-21.1, *Aviation Ground Support*.

Successful deployment, employment, sustainment, and redeployment of a MAGTF ACE are the result of well-coordinated naval AVLOG support

activities conducted at the strategic, operational, and tactical levels.

The strategic, operational, and tactical levels of logistics function as a coordinated whole, rather than as separate entities. Although the Marine Corps generally focuses on the operational and tactical levels of logistics, all Marines must understand the interaction of the three. Associated national agencies (Office of the Secretary of Defense and Defense Logistics Agency), the joint staff, and individual Military Services address strategic logistics issues. The Services coordinate their required strategic and operational logistics interfaces. Marine combatant commanders and their logistics staffs (supporting and supported) manage strategic and operational logistics issues that affect their assigned missions. Service components, subordinate commanders, their logistics staffs, and small-unit logisticians handle operational and tactical logistics issues.

Strategic-Level Aviation Logistics

Strategic AVLOG supports organizing, training, and equipping the forces needed to further the national interest. It links the national economic base (people, resources, and industry) to naval aviation operations. The combination of strategic resources (the national sustainment base) and distribution processes (our military deployment components) represents our total national capabilities.

These capabilities include the Department of Defense (DOD), the Military Services, other government agencies as necessary, and the support of the private sector. Strategic naval AVLOG capabilities are generated based on guidance from the CNO N78 and the DC/A, while AVLOG requirements are identified by the operating forces. Lead times to coordinate and plan strategic naval AVLOG vary, ranging from up to 10 years or more for facility development, to 2 years for fiscal and routine operational contingency planning, to mere days for positioning AVLOG assets around the globe in response to a crisis.

AVLOG support-specific items are provided through Navy material and equipment support systems. DC/A coordinates with the CNO; Commander, Naval Air Systems Command (COMNAVAIRSYSCOM); Commander, Naval Sea Systems Command (COMNAVSEASYSKOM); Commander, Space and Naval Warfare Systems Command (COMSPAWARSYSKOM); and other naval aviation support activity commanders in—

- Planning for and acquisition of equipment, weapons, weapon systems, material, supplies, facilities, maintenance, and support services required for Marine Corps aviation.
- Coordinating with the CNO to ensure the characteristics of newly procured or developed AVLOG assets for the Marine Corps meet operational requirements.
- Ensuring proposed training would prepare Marine Corps AVLOG personnel for required support activities.
- Planning, developing, and fielding automated information systems (AIS) that support Marine Corps AVLOG.

Within the Aviation Department of Headquarters, Marine Corps (HQMC), the Aviation Logistics Support Branch (ASL) coordinates with the Office of the Chief of Naval Operations (OPNAV) (N78) staff and other agencies for planning the logistical support of Marine Corps (Active and Reserve) aviation in matters of policy, management, procurement, supply, and distribution of material, including acquisition, planning, programming, construction, management, maintenance, and disposition of real estate and facilities for aviation installations.

Operational-Level Aviation Logistics

Operational AVLOG links tactical requirements to strategic capabilities to accomplish the ACE's operational goals and objectives. It includes the support to sustain air missions and major operations. Operational AVLOG

supports expeditionary aviation operations and provides theater-wide AVLOG support, generally over periods of weeks or months. Aviation logisticians assist in resolving tactical requirements and coordinate the allocation, apportionment, and distribution of resources within theater as well as continental United States assets. They interface closely with operators at the tactical level to identify theater shortfalls and report them to the supporting establishment. At the operational level, the concerns of the aviation logistician and the operator are closely interrelated. Operational-level AVLOG orients on supporting force closure with the objective, sustainment, reconstitution, and redeployment of the ACE in theater, which includes the following:

- Supporting operational-level command and control (C2) for effective planning and management of operational AVLOG efforts.
- Supporting AVLOG requirements at intermediate and forward support bases.
- Developing concept of AVLOG support for operation and contingency plans (OPLANs/CONPLANs).
- Supporting employment of geopositioned and maritime prepositioned AVLOG support assets.
- Supporting arrival and assembly of aircraft and the aviation logistics support ships (T-AVBs) in theater, and their reception, staging, onward movement, and integration (RSOI).
- Coordinating AVLOG support with joint, other Service, and host nation agencies.
- Supporting the reconstitution and redeployment of the ACE and maritime prepositioning forces (MPFs) for follow-on missions.

Tactical-Level Aviation Logistics

The focus of this level is to support the ACE commander's intent and concept of operations while maximizing the commander's flexibility and freedom of action. Tactical AVLOG involves the coordination of functions required to sustain

and move aviation squadrons, personnel, equipment, and supplies. These functions must deliver flexible and responsive AVLOG to meet the needs of the forces engaged in operations. The response time of tactical AVLOG must be flexible and capable of expeditious deployment. This type of support requires anticipatory planning.

The ACE is specifically designed to possess the organic CSS organizations to accomplish assigned missions, AVLOG, and AGS. Although no single element of the ACE has all of the operational and logistics capabilities needed to operate independently, each element has the capability for some basic self-support tasks. The ACE possesses unique AVLOG support capabilities essential for aircraft operations—the MALS. Typically, the ACE deploys with accompanying supplies to conduct operations for up to 90 days (the period when resupply channels are being established and flow of supplies initiated).

Marine Aviation Logistics Squadron

It is important to note that the Marine Expeditionary Unit (MEU) ACE is normally embarked aboard an air-capable ship; e.g., amphibious assault ship (general purpose) (LHA) or amphibious assault ship (multipurpose) (LHD). AVLOG support of embarked Marine aircraft is the responsibility of the ship's aircraft intermediate maintenance department (AIMD), supply department, and ordnance department rather than the MALS. Marine Corps aircraft squadrons operating from a carrier would receive support from similar entities aboard the carrier. Maintenance, supply, and ordnance personnel from the MALS and the aircraft squadrons generally augment the Navy personnel assigned to these sections by working in shipboard spaces to provide required support.

The MALS is the Marine Corps' tactical AVLOG organization and is responsible for providing intermediate (I)-level maintenance, supply, and ordnance/armament support for aircraft and aeronautical equipment. Each MALS provides a core

group of supervisory and support personnel who, when augmented by aircraft-specific maintenance personnel from aircraft squadrons, provides an intermediate maintenance capability for either fixed-wing (FW) or rotary-wing (RW) aircraft. See figure 1-1.

Maintenance Levels

Chief of Naval Operations Instruction (OPNAVINST) 4790.2H, *The Naval Aviation Maintenance Program (NAMP)*, supports CNO/Commandant of the Marine Corps (CMC) readiness and safety objectives, and provides for optimum use of manpower, facilities, materiel, and funds. The NAMP is founded upon the three-level maintenance concept: organizational (O)-level, I-level, and depot

(D)-level. It is the authority governing management of O-level, I-level, and D-level aviation and aeronautical equipment maintenance. It provides the management tools required for efficient and economical use of personnel and material resources in performing maintenance. It also provides the basis for establishing standard organizations, procedures, and responsibilities for accomplishing all maintenance on naval aircraft, associated materiel, and equipment. The division of maintenance into the three levels allows management to—

- Classify maintenance functions by levels.
- Assign responsibility for maintenance functions to a specific level.
- Assign maintenance tasks consistent with the complexity, depth, scope, and range of work to be performed.

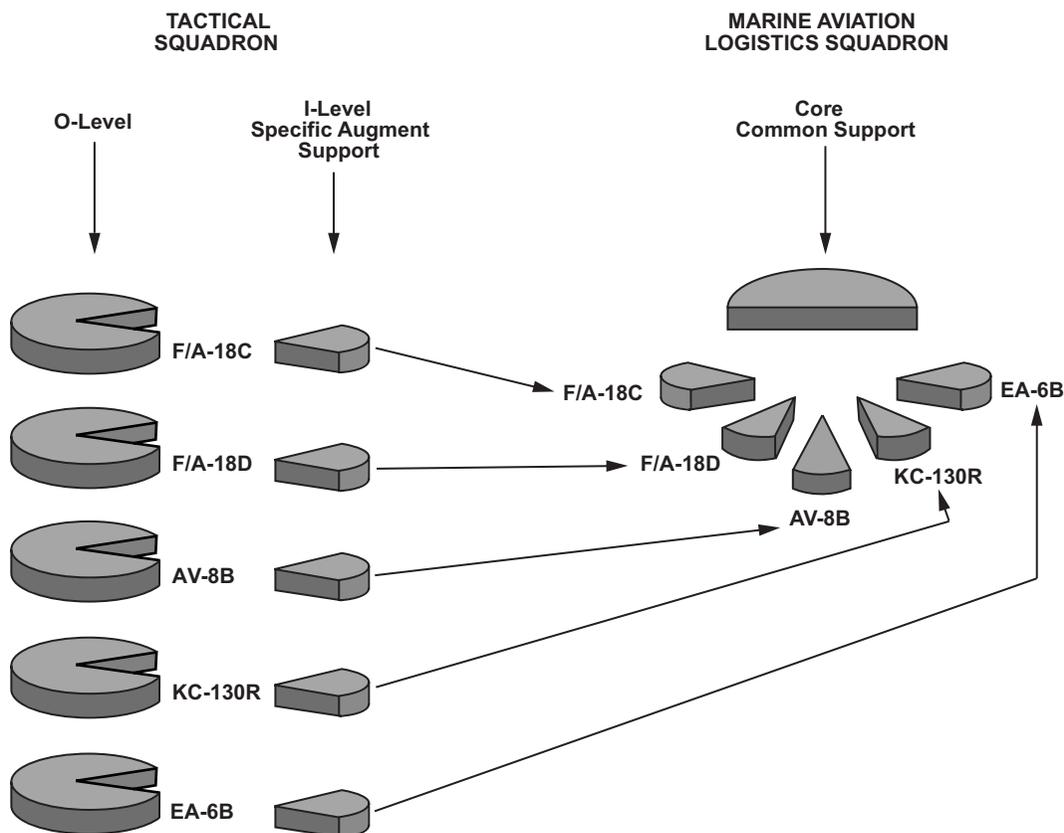


Figure 1-1. MALS Support Organization.

- Accomplish any particular maintenance task or support service at a level that ensures optimum economic use of resources.
- Collect, analyze, and use data to assist all levels of NAMP management.

Organizational-Level Maintenance

O-level maintenance is performed by operating units (squadrons) on a day-to-day basis in support of their operations. The O-level maintenance mission is to maintain assigned aircraft and aeronautical equipment in a full mission-capable status while continuing to improve the local maintenance process. While O-level maintenance may be done by I-level or D-level activities, O-level maintenance is usually accomplished by maintenance personnel assigned to aircraft squadrons. Generally, O-level maintenance can be grouped under the following categories:

- Inspections.
- Servicing.
- Handling.
- On-equipment corrective and preventive maintenance, including repair, removal, and replacement of defective components.
- Class V(A) ordnance loading/unloading and arming/dearming.
- Incorporation of technical directives (TDs).
- Recordkeeping and reports preparation.
- Age exploration of aircraft and equipment under reliability-centered maintenance (RCM).

Intermediate-Level Maintenance

I-level maintenance is the responsibility of and performed by designated maintenance activities, in most cases the MALS. The I-level maintenance mission is to enhance and sustain the combat readiness and mission capability of supported activities by providing quality and timely material support at the nearest location with the lowest practical resource expenditure. I-level maintenance consists

of on- and off-equipment materiel support and may be grouped as follows:

- Performance of maintenance on aeronautical components and related support equipment (SE) and EAF components.
- Calibration of designated equipment.
- Processing aircraft components from stricken aircraft.
- Providing technical assistance to supported units.
- Incorporation of TDs.
- Manufacture of selected aeronautical components, liquids, and gases (cryogenics).
- Performance of on-aircraft maintenance when required.
- Age exploration of aircraft and equipment under RCM.
- Weapons preparation.

Depot-Level Maintenance

D-level maintenance is performed at naval aviation industrial establishments to ensure continued flying integrity of airframes and flight systems during subsequent operational service periods. D-level maintenance is also performed on material requiring major overhaul or rebuilding of parts, assemblies, subassemblies, and end items. It includes manufacturing parts, modifying, testing, inspecting, sampling, and reclamation. D-level maintenance supports O-level and I-level maintenance by providing engineering assistance and performing maintenance beyond their capabilities. D-level maintenance functions are grouped as follows:

- Standard D-level maintenance of aircraft.
- Rework and repair of engines, components, and SE.
- Calibration by Navy calibration laboratories.
- Incorporation of TDs.
- Modification of aircraft, engines, and SE.
- Manufacture or modification of parts or kits.
- Technical and engineering assistance by field teams.
- Aircraft armament of aircraft and equipment under RCM.
- Rework of EAF components.

Marine Aviation Logistics Support Program

The Marine Aviation Logistics Support Program (MALSP), together with the T-AVBs and maritime prepositioning ships (MPSs), provides the MALS with the ability to support all aircraft types that compose a MAGTF ACE. MALSP was implemented to provide flexible and effective operational AVLOG to the deployed ACE. It enables ACE AVLOG planners to rapidly and efficiently identify, marshal, and deploy those AVLOG elements that are necessary to support a task-organized mix of Marine aircraft.

Prior to the MALSP, there was no standard method of task-organizing aviation spare parts, SE, EAF, mobile facilities (MFs), and aviation support personnel. The experience of the unit supply and/or maintenance officer was the basis for decisionmaking as to what assets to take when organizing for deployment. Because experience levels differed from unit to unit, no two units deployed with similar support packages. The potential to leave behind items vital to the unit mission was great. The time required to assemble AVLOG support packages exceeded all other phases of task-organizing an ACE. Although AVLOG support was provided, it was neither responsive nor effective.

Task-Organizing Aviation Logistics

A key feature of the MALSP concept is the ongoing development of logistics support capable of rapid task organization and deployment. The primary means for accomplishing this enhancement is a series of standardized, predetermined logistics support packages containing all elements required to support any CONPLAN that the Marine Corps may be tasked to execute. Contingency support packages (CSPs), the primary MALSP building blocks, contain negotiated allowances of spare parts, SE, EAF, MFs, and the personnel needed to sustain Marine aviation in combat.

MALSP, together with the MPF program (including the T-AVBs), will provide aviation logisticians the ability to identify and integrate people, SE, EAF, MFs, and the spare parts needed to support all aircraft types that could compose a MAGTF ACE. MALSP integrates current and future support programs and concepts necessary to sustain Marine aviation in combat.

In garrison, Marine aircraft squadrons of a specific type/model/series (T/M/S) are usually consolidated in specific Marine aircraft groups (MAGs). In combat or other contingencies, the Marine Corps task-organizes to provide a tailored force with appropriate capabilities for the designated mission. Requirements to task-organize means that Marine aviation will likely deploy by combining (compositing) different T/M/S aircraft from several MAGs into a single aviation element. The result is a task-organized squadron, MAG or Marine aircraft wing (MAW) depending on the size of the force required. The attachment or detachment of aircraft associated with task-organizing is only one aspect of the equation. The transfer and receipt of the logistics support packages between task-organized units is a more complex undertaking.

Compositing MALSP Support Packages

Compositing occurs when creating the MAGTF ACE. For example, aircraft squadrons of different T/M/S aircraft may be tasked to move from one MAG to another, creating a composite MAG. This composite MAG can serve as either an RW or FW element of the ACE. As the aircraft move to join a composite unit, the associated logistics support must also move.

The MALS within the MAG supplying the aircraft squadron will provide the supporting logistics assets in the form of T/M/S specific “building blocks.” The MALS that these “building blocks” are drawn from is the parent MALS. The MALS that will receive these “building blocks” or CSP, is the host MALS. In this manner, Marine aviation logisticians are able to use a building block approach to rapidly

establish a comprehensive support package capable of supporting any aircraft mix.

It is important to ensure that the composition of the various MALSP packages is well understood. A typical MALS will have the following:

- Fly-in support package (FISP).
- Peculiar contingency support package (PCSP).
- Common contingency support package (CCSP).
- Follow-on support package (FOSP).
- Training squadron allowance (TSA).

Logistics planning for MALSP requires that the logistics assets available at each MALS be considered and used in sourcing the various MALSP support packages. As a starting point in developing MALSP, notional aircraft assignments to support Marine Expeditionary Brigade (MEB) ACEs were developed. Logistics support requirements were then developed and organized into MALSP support packages to support the notional MEB ACE. The packages are capable of providing support for a predetermined number of a particular T/M/S aircraft. The T/M/S PCSPs are capable of being stacked upon a common “core” CSP at a host MALS much like building blocks. These building blocks can be arranged in any way that the operational commander requires.

Each of the building block allowance categories described is designed to support a specific type and number of aircraft at a predetermined level of repair. These allowances are designed to be mutually supportive and fit together like blocks to form a solid aviation support foundation. See figure 1-2. For example, AVLOG assets can be task-organized from one or more parent MALS and joined to the core of a host MALS. Together, RW and FW composite MALS will form the logistics support base for the MAGTF ACE for up to 90 days at combat flying hour rates.

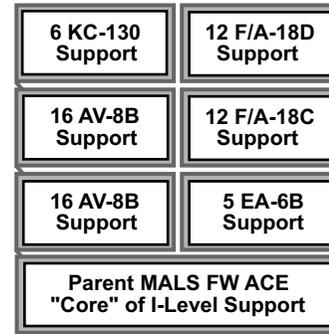


Figure 1-2. MALSP Building Block Concept.

Fly-In Echelon

ACE FW and RW aircraft are flight ferried directly to the theater of operations supported by Air Mobility Command (AMC) aerial tankers and cargo aircraft. The remainder of the fly-in-echelon (FIE) will be flown into the theater of operations via AMC/Civil Reserve Air Fleet (CRAF) aircraft and will include squadron personnel (i.e., maintenance and support crews); a representative T/M/S FISP contained in MFs; limited O-level individual material readiness list (IMRL)/SE; and EAF items.

FISPs are O-level parts support packages designed to support the FIE aircraft of the MAGTF ACE. FISP allowances provide the spare parts normally removed and replaced at the O-level. The allowances are computed at combat utilization rates for a 30-day endurance period and are designed to support a particular T/M/S and quantity of aircraft. These assets are additive to the aviation consolidated allowance list (AVCAL) and the consolidated shipboard allowance list (COSAL).

Until activated in support of a contingency, a FISP is considered protected stock materiel, maintained under the cognizance of the MALS aviation supply officer (AVNSUPO), to be drawn down only to rotate stock/maintain configuration control. FISP assets are not removed to fill material requirements

in support of garrison/peacetime operations. Additionally, FISPs are not used as “pack-ups” to support garrison/peacetime squadron deployments or training exercises without the approval of HQMC ASL.

SE supporting the FIE includes all N-coded IMRL and minimal P, L or M custody-coded IMRL items required during flight ferry or for initial aircraft debarkation, parking or servicing operations. FIE SE assets, when combined with the assets off-loaded from MPSs, comprise all necessary custody-coded [O-level] SE required during the first 30 days of a contingency.

Upon a squadron’s arrival in the area of operations (AO), the FISP will be combined with the O-level and limited I-level SE transported into theater via FIE and/or MPS. This combination provides readiness and sustainability for the deployed aircraft

until a tailored I-level maintenance capability [MALS] arrives in theater aboard a T-AVB, by airlift or by other means.

Contingency Support Packages

CSPs consist of the common and specific I-level logistics support required for the composite deployment of detachments/squadrons of particular T/M/S aircraft. See figure 1-3.

The five basic elements that compose CSPs are personnel, SE (i.e., IMRL items), EAF, MFs, and AVCAL/COSAL.

For each element, there are master allowance documents; i.e., table of organization (T/O), IMRL, table of basic allowance (TBA), and AVCAL/COSAL. Because O-level IMRL, MF allowances, and personnel allocations are already separately identified and rapidly deployable, they are incorporated

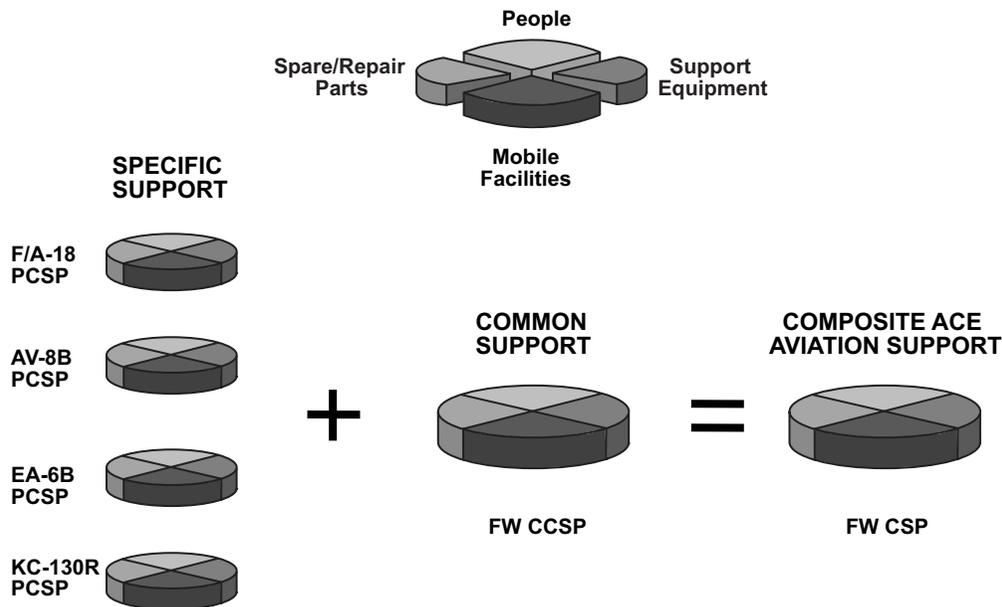


Figure 1-3. MALSP Contingency Support Packaging.

into CSPs. CSP allowances are computed at the combat utilization rate for a 90-day endurance period. From the master allowance documents, MALSP allowances are divided into subcategories and are derived as follows.

Peculiar Contingency Support Package Allowances

PCSP allowances consist of the specific items required to provide I-level supply and SE support for a specific T/M/S aircraft. A specific item is one that is tied to a specific aircraft or SE application.

Common Contingency Support Package Allowances

CCSP allowances consist of those Marine common supply assets and SE that the host MALS provides in support of assigned aircraft. An FW common item is one that has application to at least the F/A-18 and AV-8 aircraft. An RW common item is one that has application to at least the CH-53, CH-46E, H-1 or any asset that has common application to the MV-22B aircraft. For planning purposes it is assumed that the FW and RW MALS will be geographically separated.

Follow-On Support Package Allowances

FOSP equipment consists of those items that, although not required to initiate the assault, are required to sustain the force indefinitely. Because of airlift and sealift constraints, these items must be phased into a deployment area by assault follow-on echelon (AFOE) or follow-on shipping. Allowances are built to a 90-day endurance level and are distinctly identified in allowance documents provided to each MALS.

Remote Expeditionary Support Package

On occasion, Marine aircraft deploy in support of contingencies without MPF assets. Due to operational timing, economic considerations, and geography, these aircraft squadrons will deploy to an AO with only a FISP and a MALS detachment with the requisite AVLOG support elements required to sustain initial combat flight operations.

In these scenarios, MALS detachments and the requisite FISPs come together to form a remote expeditionary support package (RESP). Deliberate AVLOG requirement planning in support of major theater war OPLANs is available. In such cases, operational planning requires that these squadrons deploy with a FISP and a requisite logistic support package that will sustain initial combat flight operations until MPF assets arrive.

Design and allowances of CCSPs/PCSPs are based on support of an entire MEB's ACE complement of aircraft. Allowances of PCSPs support either a full squadron of aircraft or, in some cases, multiples of a full squadron of aircraft; i.e., 16 AV-8B PCSP = required specific support for a single AV-8B squadron vs. 36 F-18 PCSP = required specific support for 3 F-18 squadrons. The design of CCSPs/PCSPs supports the deployment and logistics of entire squadrons/groups of squadrons used during major theater war/contingencies. Although this type of allowing makes great use of scarce economic resources, it does not lend itself well to rapid tailoring of CSPs that support less than a predetermined number of aircraft. Often, Marine aircraft must support contingencies that are at the lower end (intensity) of military operations and military operations other than war. Usually, these contingencies do not require multiple squadrons of an aircraft type and therefore the full support of CCSPs/PCSPs.

An RESP is a combination of O-level protected stock FISP, aviation weapons support equipment, aviation support equipment, MFs, and MALS personnel that would detach from a CSP to be used to support ACE operations. An RESP is strategically airlifted to the area of responsibility and designed to support a notional number of aircraft minus class V(A) munitions until arrival of logistics support from T-AVB (CCSP/PCSP) or MPF assets. When full CSPs operational requirements are not deployed, an RESP can act as a stand alone capability to support operational requirements.

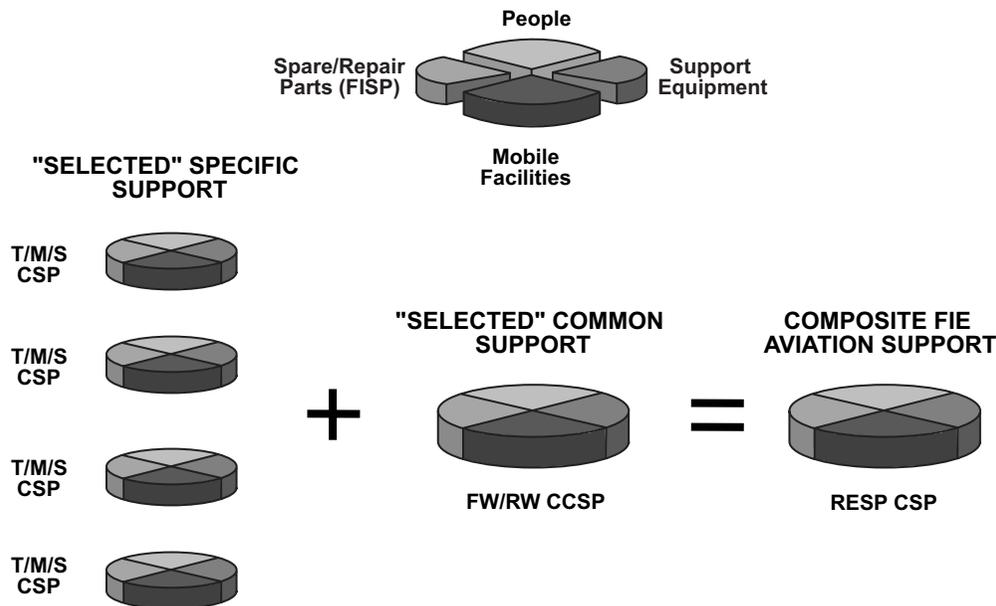


Figure 1-4. RESP Support Packaging.

Developed during deliberate planning, RESPs provide AVLOG planners “ready-made” tools to rapidly tailor support regardless of aircraft mix and operational scenario. Composition of RESPs includes the AVLOG support elements currently resident within CCSPs/PCSPs, and requires no additional economic resources. See figure 1-4.

Training Squadron Allowances

Designated MALS provide support to training squadrons attached to the MAG they support. TSAs are built to support a 30-day endurance period at peacetime flying hours. TSA IMRL/AVCAL/COSAL/MFs are additive to the allowances of the MALS and are distinctly identified as such in allowance documents.

Maritime Prepositioning Force and Aviation Logistics Support Ship Support

All ACE aircraft can be supported by one or more of three squadrons of MPSs, and one or both of the AVLOG support T-AVB ships.

MPF Operations in Support of Expeditionary AVLOG

An MPF operation is the rapid deployment and assembly of a MAGTF into a permissive area using a combination of strategic airlift and forward-deployed MPSs. MPF operations are strategic deployment options that are global in nature, naval in character, and suitable for employment in a variety of circumstances. An MPF is a rapid response enabling force capable of being mission-tailored and self-sustainable. As such, MPF operations provide an essential element in conducting national military strategy. An MPF can directly support our national maritime strategy of protecting key naval choke points and sea lines of communication. MPF operations include the airlift of MAGTF and Navy elements (Navy support element, naval coastal warfare, etc.) with some associated equipment into an arrival and assembly area to join with equipment and supplies carried aboard MPSs.

T-AVB Operations in Support of Expeditionary AVLOG

The primary mission of the T-AVB is to provide dedicated sealift for movement of I-level AVLOG support for rapid deployment of a MEB ACE. The T-AVB is designed to transport critical maintenance and supply assets to a forward operating area to establish an intermediate maintenance activity [MALS] in support of deployed Marine aircraft. Although the concept of operations for the T-AVB is primarily to support MAGTF operations, the T-AVB could be tasked to support other amphibious operations. An amphibious operation provides for forcible entry into an objective area, rather than the unopposed entry required for an MPF. In all cases, the T-AVB would still require an unopposed entry into an objective area before offloading ashore. If the embarked MALS intermediate maintenance support is phased ashore, a secondary mission can be performed to serve as an asset dedicated to strategic sealift.

To enhance responsiveness, one ship is berthed on the east coast and another on the west coast of the United States. Both ships (*SS Wright/T-AVB-3* and *SS Curtiss/T-AVB-4*) are part of the Ready Reserve Force and are crewed by Maritime Administration personnel in a reduced operating status. They can be fully activated in 5 days. When activated, the Ready Reserve Force ships come under the operational control (OPCON) of the Military Sealift Command (MSC). Both *SS Wright* and *SS Curtiss* can be configured to allow for I-level repair capability while underway, in stream or pierside and are heavy-lift helicopter capable. The MALS can be partially operational aboard the T-AVB during transit to the AO.

On notification of movement, the T-AVB is expected to arrive in the operational area within 30 to 35 days to marry with aircraft, personnel, and support prepositioned by FW FF and the FIE units. Transfer of the Intermediate Maintenance Activity spare parts and equipment ashore normally begins on arrival (if conditions permit).

MALS operations can be sustained in the operational area if rapid movement ashore is not possible. Under these conditions, the T-AVB prioritizes its workload in support of flight-line maintenance requirements to ensure that mission-essential support is provided. See figure 1-5 on page 1-12.

Reserve Aviation Logistics

The Marine Corps Reserve is organized under the Commander, Marine Corps Forces Reserve. The mission of the Marine Corps Reserve is to provide trained units and qualified individuals to be available for active duty in time of war or national emergency and at such other times as national security may require. Marine Corps Reserve aviation support is organized and employed in the same manner as in the Active forces. Reserve aviation support units are capable of independent, task-organized logistic support as an element of a MAGTF. The MAGTF commander can integrate Reserve assets into the MAGTF's ACE in the same manner and with the same ease as Active assets. The structure of the Marine Corps Reserve predominantly reflects the Active operating forces. The Marine Corps Reserve is organized into individual augmentation detachments that are assigned to an operating force's higher headquarters and throughout the supporting establishment when activated. Actual employment of the Marine Corps Reserve's assets is situation driven. Marine Corps Reserve AVLOG can—

- Reinforce Active operating forces.
- Augment Active operating forces and supporting establishment activities including remain-behind equipment and fleet replacement squadron support.
- Form MAGTFs for service with the fleet.

Marine Corps Reserve logistics capabilities and responsibilities are comparable to the logistics capabilities and responsibilities of their Active

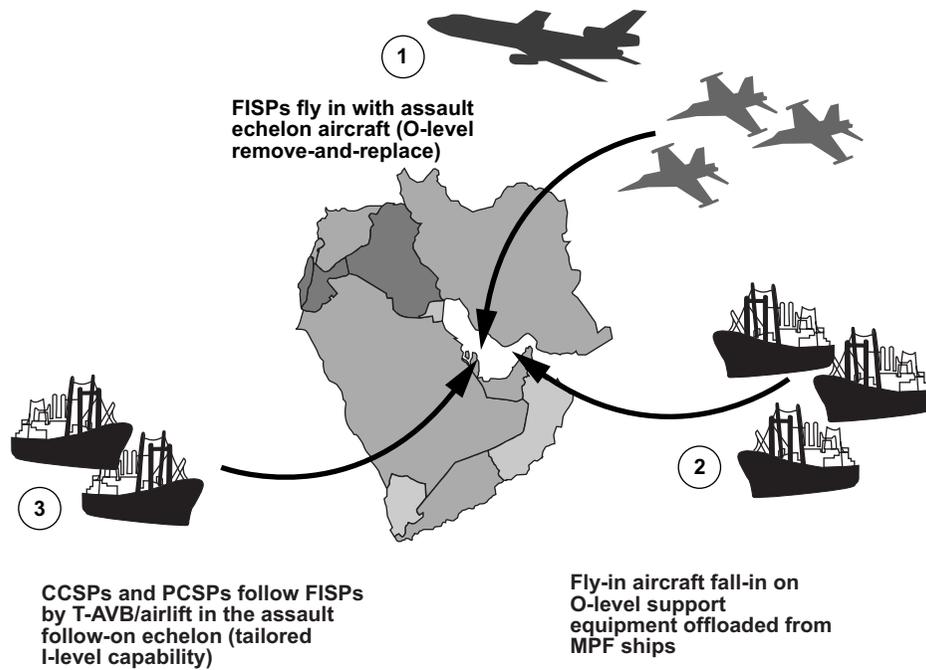


Figure 1-5. MALSP Employment.

counterparts. The Marine Corps Reserve can augment and reinforce any major operation in which Marine forces operate. Combatant commanders exercise combatant command (command authority) over assigned Marine Corps Reserve forces when mobilized or ordered to Active duty (other than for training). The

Selected Marine Corps Reserve is assigned to the Commander, US Joint Forces Command who exercises combatant command (command authority) and training and readiness oversight authority on a continuous basis through the Commander, Marine Corps Forces, Atlantic (COMMARFORLANT).

CHAPTER 2

ORGANIZATIONS AND RESPONSIBILITIES

Each organization has inherent logistics capabilities and specific responsibilities at the strategic, operational, and tactical levels of war. Responsibilities and capabilities overlap because no organization or level of support can function effectively without extensive, continuous coordination between supported and supporting organizations.

Aviation Logistics Supporting Establishment

Numerous Department of the Navy (DON) commands/agencies support naval aviation; i.e., the Navy and the Marine Corps. See figure 2-1. In logistics, the most visible function is naval aviation materiel support, provided by the naval systems commands. Naval systems commands support responsibilities include the development, logistics support planning, acquisition, testing and evaluation, contracting, construction, installation, conversion, alteration, configuration management, overhaul, and D-level maintenance and repair of the following:

- Aircraft.
- Weapons and weapons systems.
- Missiles and other expendable ordnance.
- Command, control, and communications.
- Training equipment and devices.

- Land vehicle systems and equipment.
- Shore facilities, utilities, and related equipment.
- Materiels, supplies, and supporting services for the Navy and the Marine Corps.

Naval Air Systems Command

The Naval Air Systems Command (NAVAIRSYSCOM) is responsible for research, design, development, test, acquisition, and logistic support of all aviation procurements relating to Navy and Marine Corps aircraft, missile targets, associated materiel, and equipment. As the technical manager for aviation maintenance, the COMNAVAIRSYSCOM—

- Provides guidance on procedures, technical direction, and management review at each level of maintenance.
- Provides aviation maintenance procedural documents in sufficient scope and depth to clearly define the maintenance functions, organizations, and responsibilities to perform these functions.
- Implements and maintains a complementing metrology and calibration program as a part of the NAMP.
- Assists the CNO and others in developing training programs for officer and enlisted personnel assigned to aviation maintenance.

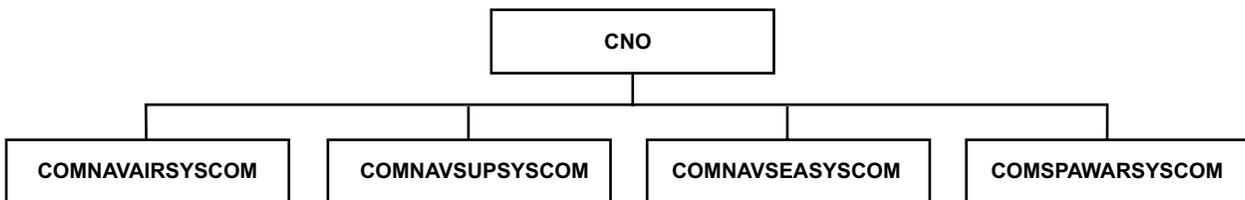


Figure 2-1. Aviation Logistics Supporting Establishment.

- Provides aviation maintenance material allowance lists, together with lists of facilities, which are authorized, available, and required for fleet and shore activities.
- Makes recommendations on design of the maintenance data system (MDS) to reduce redundant, time consuming, and unnecessary reporting; and ensure the MDS is compatible throughout all levels of maintenance.
- Serves as functional manager for Naval Aviation Logistics Command Management Information System (NALCOMIS) per Naval Air Systems Command Instruction (NAVAIRST) 5230.11, *Fleet Aviation Logistics Information Systems Functional Management Manual*.
- Provides NAMP instruction support for OPNAV N781C.
- Provides fleet aviation performance improvement support.
- Provides on-site NAVAIRSYSCOM field service representative support to activities requesting assistance.
- Develops and maintains management information systems, which directly support the fleet.
- Plans, designs, develops, and implements all information decision support systems that affect the total life cycle of aeronautical equipment.
- Provides technical support related to naval aviation resource analysis, maintenance engineering, logistics engineering, and logistics support program implementation.
- Provides support of all aviation maintenance trainers and weapons system training programs and manages D-level aircraft training courses.

Naval Supply Systems Command

The Naval Supply Systems Command (NAVSUPSYSCOM) provides materiel in support of the operation and maintenance of aeronautical equipment/ordnance. Every effort is made to have materiel located when and where it is needed. The intent is to make the relationships between the

supplier and the user as simple as possible, within the boundaries of logistic directives published by higher authority. Aviation materiel consists of spare parts for aircraft, engines, avionics, electrical, accessories, and safety equipment; EAF components; SE, common and specific SE; and weapons/ammunition. Numerous naval inventory control points (NAVICPs) and the Naval Ammunition Logistics Center (NALC) provide for the functions discussed below.

The NAVICP computes aviation materiel requirements in range and depth for the AVCAL and COSAL. This responsibility includes conducting and coordinating provisioning conferences and identification and transfer of items to be managed by other cognizant inventory control points. The NAVICP also—

- Budgets for and funds all assigned aviation materiel requirements.
- Procures materiel directly from industry or other government agencies.
- Allocates NAVAIRSYSCOM procured material to stock points, distributes materiel to fill replenishment stock requirements, and refers requisitions to stock points to meet requirements.
- Disposes of materiel in excess of system requirements, including SE, when authorized by the COMNAVAIRSYSCOM.
- Maintains aeronautical spares and spare parts catalogs. The catalog function includes obtaining National Stock Numbers (NSNs) from the Defense Logistics Information Service Center.
- Determines system asset rework requirements of repairable components to be processed by naval, inter-Service or commercial rework facilities.
- Provides primary materiel support for air-launched weapons.

The NALC is the Navy's centralized inventory manager for all naval ammunition. It is a centralized clearinghouse for fleet ordnance support management and warfare assessment, and is responsible for the policies, procedures, and business systems for arms, ammunitions,

and explosives. The Commanding Officer (CO), NALC, also has the following responsibilities:

- Provides support to fleet ordnance positioning, conducts storage analysis, and ensures worldwide visibility of the fleet plan.
- Provides direction and procedures for ammunition allowance establishment and processing; receives, reviews, and approves all allowance requests; and processes and loads all allowance data into the conventional ammunition integrated management system (CAIMS).
- Serves as the naval aviation ordnance community's point of contact for moving conventional ordnance to locations outside the continental United States.
- Provides life cycle program support for all naval ammunition, weapons, combat systems, and SE.
- Acts as the naval ordnance AIS program manager and provides functional management of CAIMS and Retail Ordnance Logistics Management System (ROLMS).

Naval Sea Systems Command

The Naval Ordnance Safety and Security Activity is the Naval Sea Systems Command (NAVSEASYS COM) component whose primary mission is to establish standard policy and procedures for and provide global oversight of DON explosives safety, ordnance physical security and environmental matters, insensitive munitions, and the NAVSEASYS COM ordnance quality evaluation program. Other management responsibilities are supervising special offices, Reserve units, and other field activities that perform explosive safety inspections. The Explosives Safety Support Offices Atlantic and Pacific continue to report as detachments to the Naval Ordnance Safety and Security Activity. Core functions include the following:

- Explosives safety.
- Inensitive munitions.

- Ordnance environmental support.
- Quality evaluation.
- Security.

Space and Naval Warfare Systems Command

As a component of Space and Naval Warfare Systems Command (SPAWARSYSCOM), Naval Tactical Command Support System (NTCSS) provides the full range of responsive mission support automated data processing (ADP) hardware and software to facilitate management of information, personnel, material, and funds required to maintain aircraft. Specifically, NTCSS supports I-level and O-level aviation maintenance management, materiel, financial management, and related administrative management.

NTCSS incorporates the functionality provided by the former systems of the Maintenance Resource Management System (MRMS), NALCOMIS Organizational Maintenance Activity and NALCOMIS Intermediate Maintenance Activity, and Shipboard Nontactical ADP Program (SNAP) through the functional enhancement and integration of existing legacy systems. Depending on the nature of the user site, all or some of these functions are available to afloat units, Marine Corps air stations, and MALS.

NTCSS provides tactical commanders the required mission support information for tactical decisions, improved equipment supportability, and maintainability. This results in a commensurate enhancement in the material condition and combat readiness of surface, subsurface, and aviation units. The key AIS used by aviation logisticians are NALCOMIS Organizational Maintenance Activity and NALCOMIS Intermediate Maintenance Activity, SNAP, and Shipboard Uniform Automated Data Processing System-Real Time (SUADPS-RT) discussed in detail in chapter 4.

Type Commanders

Type commanders (TYCOMs) are responsible for the maintenance and materiel condition of aeronautical equipment assigned to their cognizance for the operation and support of the naval aviation mission. Each TYCOM coordinates aeronautical equipment assignment logistic support, and maintenance performed on aeronautical equipment under his/her custody. Naval operating forces are assigned to TYCOMs for training, employment, and logistic support. The Commander, Marine Corps Forces, Pacific (COMMARFORPAC) and the Commander, Marine Corps Forces, Atlantic (COMMARFORLANT) are also designated as the Commanding General (CG), Fleet Marine Force, Pacific, and the CG, Fleet Marine Force, Atlantic, respectively. While in this role, they are the TYCOMs for the Marine Corps on Marine aviation ordnance. Logistics support, aviation ordnance training requirement submission, and noncombat expenditure allocation of class V(A) materiel are the only TYCOM functions performed by the CGs of the Fleet Marine Forces, Atlantic and Pacific. The Commander, Naval Air Force, Atlantic (COMNAVAIRLANT); the Commander, Naval Air Force, Pacific (COMNAVAIRPAC); and the Commander, Naval Reserve Force are the TYCOMs for Marine Corps aircraft and aviation support equipment. They are responsible for logistic support of both Navy and Marine Corps aircraft and engines.

The COMMARFORLANT/PAC Aviation Logistics Department (ALD) supports the COMNAVAIRLANT/PAC, respectively, for logistic matters related to aviation materiel readiness and internal materiel management of common aviation support. Factors impacting materiel readiness include aircraft configuration management, budgeting procedures, personnel training, aircraft materiel condition, individual material readiness list management, and other special programs.

Naval Aviation Depots and Cognizant Field Activities

Industrial functions consist of three general categories: rework activities, aeronautical modification, and support services.

Rework Activities

Rework activities are comprised of maintenance and modification functions. Maintenance functions are those functions required to maintain or restore the inherent designed service levels of performance, reliability, and materiel condition. They span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of system consumables. They also include inspection, calibration, and testing.

Aeronautical Modification

Aeronautical modification functions are required to change or improve design levels of performance, reliability, and materiel condition. The term modification, as used in this publication, includes alteration, conversion, engineering change, and modernization, etc. For effectively performing industrial rework and manufacturing functions, aviation systems, subsystems, components, and equipment must be allocated and distributed to the various production shops according to particular industrial function capabilities.

Support Services

The D-level supports the O- and I-levels by providing technical help and carrying out those functions beyond the responsibility or capability of the O- and I-level activities through the use of more extensive facilities, skills, and materials. Personnel from depots carry out D-level functions in depots or in the field.

The Naval Aviation Depot will—

- Maintain and operate facilities and perform a complete range of D-level rework operations on designated weapon systems, accessories, and equipment.
- Manufacture parts and assemblies as required.
- Provide engineering services in the development of changes in hardware design.
- Furnish technical and other professional services on aircraft maintenance and logistics problems.
- Perform other levels of aircraft maintenance for eligible activities, on specific request or assignment.
- Perform other functions as directed by the COMNAVAIRSYSCOM.

Headquarters, US Marine Corps/ Aviation Logistics Support Branch

The DC/A and the Head, ASL are responsible for developing and implementing matters of AVLOG policy and management. AVLOG materiel, equipment, and systems are provided for through Navy materiel and equipment support systems. HQMC ASL coordinates with each department of aviation branch (aviation plans/programs/budgets, aviation weapons systems requirements, etc.), OPNAV, COMNAVAIRSYSCOM, COMNAVSEASYSYSCOM, COMSPAWARSYSYSCOM, and other naval aviation support activities in the planning for and acquisition of equipment, weapons, weapon systems, materiel, supplies, facilities, maintenance, and support services for Marine Corps aviation.

HQMC ASL also coordinates with CNO to ensure the characteristics of newly procured or developed equipment and materiel for the Marine Corps meet operational requirements; proposed training prepares Marine Corps personnel for combat; and in the planning, development, and fielding of AISs in support of Marine Corps aviation. HQMC ASL

coordinates AVLOG actions with other agencies as part of its responsibility for Marine Corps aviation. Specific functions within the purview of HQMC ASL include the following:

- Assist CNO staff and the naval AVLOG supporting establishment in distributing aeronautical and related materiel for adequate outfitting of Marine Corps aviation units.
- Develop logistics plans and programs for aviation units and represent Marine Corps aviation in developing naval aviation maintenance and supply policies and procedures.
- Represent Marine Corps aviation in the development and execution of maintenance plans, test equipment master plans, and integrated logistics support plans for aeronautical weapons systems and related equipment subsystems and aviation ordnance.
- Represent the Marine Corps in developing naval aviation maintenance and aviation supply policies and procedures.
- Provide comments, directions, and recommendations on AVLOG support for aviation weapon systems and associated equipment that are under development or in procurement.
- Coordinate AVLOG and AGS requirements relative to deployment, employment, and maritime or land repositioning.
- Develop and monitor plans and programs on aviation ordnance.
- Coordinate logistics support needs for airborne armament and armament handling equipment.
- Supervise and monitor the Aviation Explosive Safety Program and conventional ammunition.
- Function as the occupational field specialists in aviation maintenance, avionics, ordnance, aircraft rescue and firefighting, EAFs, meteorology and oceanography, and supply military occupational specialties.
- Monitor and analyze aircraft readiness data and recommend appropriate actions.

- Assist CNO and other supporting agencies in the planning, programming, development, and fielding of ADP equipment and software to support Marine AVLOG.
- Provide program direction for the MALSP within approved aviation plan requirements.
- Coordinate with CNO, NAVAIRSYSCOM, and subordinate DON activities on MALSP policy and requirements within a command and between supported and supporting commands.

Marine Corps Forces Component, Aviation Logistics Department

All joint forces with Marine Corps Forces (MARFOR) assigned will include a Marine Corps component headquarters such as MARFORLANT or MARFORPAC. The Assistant Chief of Staff (AC/S) ALD, as a primary staff branch of each MARFOR, is responsible for strategic and operational aspects of AVLOG for forces assigned under their cognizance. The AC/S ALD ensures the readiness of assigned aircraft, SE, mobile facilities, and aviation munitions by providing support and sustainment. The AC/S ALD advises Marine component commanders on readiness, policies, deliberate planning, organization, functions, and operations. When directed, the ALD deploys in support of MARFOR component HQ. The AC/S ALD is responsible for management, distribution, and accountability of mobile facilities and ancillary equipment. ALD provides AVLOG assistance as required to bases and stations. Specific functions within the purview of each MARFOR ALD follow.

Aircraft Maintenance

- Provide counsel to the AC/S ALD and other staff sections on all aviation maintenance-related matters.
- Develop and coordinate with NAMP policy steering committee on MARFOR maintenance/materiel policy and procedures.
- Participate with external aviation support activities in all decisionmaking processes that relate to MARFOR deployability and sustainability.
- Ensure the appropriate application and allocation of AVLOG support for unit deployments, exercises, and contingency operations.
- Collect and analyze maintenance, management, and materiel (3M) readiness data to determine logistics support shortfalls and provide corrective action recommendations.
- Provide technical assistance to subordinate units and any internal staff section on the status of aircraft maintenance or the degradation of aviation capabilities.
- Monitor engine, airframe, and associated SE maintenance and modifications.
- Assist in the development of AVLOG inputs to operation plan time-phased force and deployment data (TPFDD).
- Serve as a member of logistics readiness and support programs related to the integrated logistics support management teams, MALSP, and readiness reviews.
- Participate with outside support activities to develop AVLOG support requirements under the Amphibious Ready Group Aviation Readiness Plan and Unit Deployment Program.
- Coordinate with appropriate activities, enhancements, and standardization of aviation maintenance-related AIS.
- Advise on personnel in occupational fields 60/61XX.
- Review, analyze, and evaluate managerial and performance data in relation to the aviation maintenance effectiveness and readiness posture of the force.

Aviation Supply

- Provide counsel to AC/S ALD and other staff sections on all aviation supply-related matters.
- Advise subordinate commands on aviation supply concerns.

- Maintain liaison with higher and adjacent commands on aviation supply readiness and support issues.
- Participate with all activities involved to improve aviation supply support policies and processes to ensure maximum aircraft/aeronautical system readiness.
- Is the point of contact for aviation supply-related affordability issues.
- Participate with all activities involved to identify and resolve significant aviation supply issues negatively impacting force readiness.
- Review, analyze, and evaluate managerial and performance data in relation to the aviation supply effectiveness and readiness posture of the force.
- Oversee aviation supply policies, plans, and procedures to ensure force deployability and sustainability.
- Monitor the execution of aviation supply functions relating to MALSP and to the T-AVB.
- Actively participate in allowance issues including modeling, funding, and filling allowances.
- Participate with outside support activities to develop AVLOG support requirements under the Amphibious Ready Group Aviation Readiness Plan and Unit Deployment Program.
- Coordinate enhancements and standardization of aviation supply-related AIS with appropriate activities.
- Maintain involvement in all flight-hour program-funding issues.
- Provide advice on matters related to personnel in occupational field 66XX.

Avionics

- Provide counsel to the AC/S ALD and other staff sections as required on all avionics-related matters.
 - Monitor force aircraft readiness statistics and assist in resolving issues related to support of all avionics weapon systems and avionics support equipment.
- Serve as the program manager and TYCOM for the force MF program.
 - Validate requirements and direct redistribution of special mission MEU (special operations capable [SOC]) equipment, tactical air electronic warfare equipment, and defensive electronic countermeasure equipment.
 - Validate requirements and participate in modernization efforts of L-Class (LHA/LHD/amphibious transport dock [LPD]) ships related to AIMD avionics support and integration of Marine Corps MFs.
 - Perform functions related to the movement of MALS components required aboard the T-AVB.
 - Furnish technical assistance to subordinate units and internal staff sections, as required, on matters relating to avionics.
 - Provide representation at meetings, conferences, and reviews dealing with avionics programs and associated equipment (Avionics Operational Advisory Group, Integrated Logistics Support Management Team, program reviews, etc.).
 - Validate requirements and coordinate support of the meteorology and calibration program, precision measurement equipment program, and automatic test equipment.
 - Provide advice on matters related to personnel in occupational fields 63XX/64XX.
 - Coordinate enhancements and standardization of avionics-related AIS with appropriate activities.

Ordnance

- Provide counsel to the AC/S ALD and other staff sections as required on all aviation ordnance-related matters.
- Function as component adviser to the combatant commander (J-4) for USMC class V(A) logistic issues.
- Monitor class V(A) ammunition prepositioning programs.
- Conduct class V(A) ammunition deliberate/contingency planning in support of OPLANs.

- Function as TYCOM for noncombat expenditure allocation (NCEA) and training programs.
- Provide oversight of explosives safety programs and serve as senior inspector during explosive safety inspections at USMC activities.
- Monitor air contingency MAGTF class V(A) ammunition package.
- Coordinate with Navy fleet combatant commanders to resolve class V(A) ammunition shortfalls.
- Coordinate with fleet combatant commander ordnance storage/load plans for air station ammunition allowances for training and pre-positioned wartime reserves.
- Provide status of in-theater class V(A) ammunition to appropriate internal staff during combat/contingency operations (expenditures, assets on hand by location, and status of inbound assets).
- Coordinate ordnance-specific weapons requirements (expeditionary storage magazines, combat aircraft loading areas) and ordnance-specific construction requirements (expeditionary ammunition storage berms).
- Register class V(A) ammunition allowances via CAIMS to monitor, review, and provide guidance to subordinate commands for inventory management, inventory accuracy, accountability, and reporting of class V(A) materiel.
- Monitor matters concerning the ROLMS and ammunition inventory tracking system (AITS).
- Act as a liaison and monitor matters affecting deployed forces afloat (training, predeployment preparations/milestones, and USMC/USN integration operability issues).
- Monitor, review, and provide guidance to subordinate commands for arms, ammunition, and explosives security.
- Validate and approve class V(A) priority 03 munitions requisitions (cartridge-actuated devices/propellant-actuated devices/aircrew escape propulsion system) provided by major subordinate commands.
- As a member of executive working group committees charged with review of publications concerning aviation ordnance

standing operating procedures (SOPs) and explosive safety manuals, represent the COMMARFORLANT, COMMARFORPAC, and COMMARFORRES.

- Manage fleet weapons support team (FWST) personnel support of conventional and air-launched weapons requirements.
- Provide advice on matters pertaining to occupational field 65XX personnel.
- Coordinate with appropriate activities, enhancements, and standardization of aviation ordnance related AIS.
- Advise the Executive Steering Group and the Program Review Group (PRG) on all matters of MARFOR interest within the Naval Ordnance Readiness Improvement Process.

Future Operations

- Coordinate and execute all functions of aviation logistics deliberate planning with combatant commander, Service component, TYCOM, and fleet participants.
- Produce Joint Strategic Capabilities Plan prescribed supporting plans, AVLOG annexes and appendices as required by the Joint Operation Planning and Execution System (JOPES) and MCWP 5-1, *Marine Corps Planning Process*.
- Identify and develop joint mission-essential task list requirements for component AVLOG requirements.
- Coordinate component AVLOG participation in joint and Service exercises.
- Identify and develop master scenario events list to maximize component and MSC AVLOG participation in joint and Service exercises.
- Coordinate crisis action planning (CAP) and execution for AVLOG RSOI, and follow-on Service logistic sustainment.
- Develop and monitor peacetime and contingency commander's critical information requirements.

- Coordinate component policy development for georepositioning programs.
- Coordinate Reserve force integration requirements for peace and contingency.
- Coordinate and monitor AVLOG support aboard MPSs.
- Provide representation and leadership at conferences, meetings, and reviews dealing with AVLOG planning and contingency requirements.
- Coordinate AVLOG requirements via Service and combatant commander channels.
- Provide AVLOG input for combatant commander integrated priority list.
- Coordinate and provide AVLOG input for component input to combatant commander's Joint Monthly Readiness Report .
- Participate in and coordinate AVLOG input to component headquarters for consideration to the Marine Requirements Oversight Counsel.
- Coordinate and provide AVLOG input for combatant commander and Service planning, programming, and budgeting system issues and documents.
- Identify, coordinate, and synchronize AVLOG requirements and implementation for new aviation platforms.

Operating Forces

The operating forces constitute the forward presence, crisis response, and fighting power available to joint force commanders. Marine Corps operating forces are primarily composed of Marine Corps Forces, Atlantic (II Marine Expeditionary Force) [MEF] under the COMMARFORLANT, and Marine Corps Forces, Pacific (I and III MEF) under the COMMARFORPAC. Each commander of Marine Corps forces may be assigned or designated as the Marine Corps component to the unified command to which his forces are assigned. The Commander, Marine

Corps Forces (COMMARFOR) coordinates and manages strategic and operational logistics support issues.

The G-4 (logistics) determines logistics and CSS requirements, including the AVLOG support provided by the MALS. The logistics officer advises the commander on the readiness status of AVLOG support packages, identifies requirements, and recommends priorities and allocations for AVLOG support in all functional areas. On the G-4 staff, billets for AVLOG specialists serve as the AVLOG liaison to the G-4. These billet holders work closely with assigned forces, specifically the assigned wing [ALD] sections regarding the following AVLOG responsibilities:

- Advise on the readiness status of AVLOG support packages.
- Develop policies and identifying requirements, priorities, and allocations for AVLOG support.
- Integrate AVLOG operations with logistics support from external commands or agencies.
- Supervise the execution of the commander's orders regarding AVLOG.
- Ensure that the concept of AVLOG clearly articulates the commander's vision of AVLOG, supports the tactical concept of operations and the scheme of maneuver.
- Conduct deliberate and CAP integrating AVLOG into overall CSS concept of support.
- Conduct RSOI planning for the AVLOG concept of support.
- Develop AVLOG concept of support for OPLANs/CONPLANs.
- Identify and resolve support deficiencies.
- Collate the support requirements of subordinate organizations.
- Identify the support requirements that can be satisfied with organic resources and pass nonsupportable requirements to the appropriate higher/external command.

- Coordinate with the amphibious task force N-4 for the AVLOG provided under ACE G-4/S-4 cognizance.

Marine Expeditionary Force, Class V(A) Logistic Support

Aviation ordnance is the only AVLOG function staffed at the MEF. The MEF aviation ordnance officer assists the deployed and preparing to deploy MEU and ACE in matters related to aviation ordnance requirements and logistic support. The MEF aviation ordnance officer also serves as a liaison for other AVLOG matters for the MEF and coordinates with the MARFOR or wing as required. Specific areas of responsibility are as follows—

- Provide counsel to AC/S G-4 and other staff sections as required on all aviation ordnance-related matters.
- Administer class V(A) ammunition prepositioning programs.
- Conduct class V(A) ammunition deliberate/contingency planning in support of OPLANs.
- Administer air contingency MAGTF class V(A) ammunition package.
- Coordinate with MARFORLANT/PAC to resolve class V(A) ammunition shortfalls.
- Provide status of in-theater class V(A) ammunition to appropriate internal staff during combat/contingency operations (expenditures, assets on hand by location, status of inbound assets).
- Coordinate ordnance-specific weapons requirements (expeditionary storage magazines, combat aircraft loading areas) and ordnance-specific construction requirements (expeditionary ammunition storage berms).
- Provide technical advice and coordinate matters pertaining to class V(A) munitions, armament weapons support equipment, and aircraft release/launch systems.
- Conduct liaison on matters affecting deployed forces afloat (training, predeployment preparations/milestones, USMC/USN integration operability issues).

- Monitor, review, and provide guidance to subordinate commands for arms, ammunition, and explosives security.
- Advise on occupational field 65XX personnel.

Marine Aircraft Wing, Aviation Logistics Department

The mission of the MAW ALD is to assist subordinate MAGs in matters related to aviation material readiness and internal material management of weapons systems. The ALD's goals are to maintain high aircraft and system readiness, minimize costs associated with maintaining aircraft, and improve AVLOG efficiency. This is accomplished through close coordination with higher HQ, supporting naval and commercial organizations and subordinate commands. The ALD organization consists of five core functional branches: aircraft maintenance, aviation supply, avionics, aviation ordnance, and AVLOG plans. These functional branches work in conjunction with other MAW branches, higher HQ, subordinate units, and outside agencies in support of the overall AVLOG mission. Specific responsibilities follow.

Aircraft Maintenance Branch

Primary Aircraft Maintenance Branch responsibilities include material readiness, aircraft configuration management and material condition, and training and related programs in support of squadrons assigned within subordinate MAGs. The aircraft maintenance officer and staff are the principal points of contact for coordinating aircraft material readiness between the aircraft TYCOM, CG MAW, and the assigned MAGs. The branch also—

- Implements and coordinates aircraft maintenance policy within the MAW.
- Conducts liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinates aircraft maintenance support for ship and unit deployments.

- Performs aircraft data analysis and aviation program management.
- Performs aircraft, engine, and SE accounting.
- Develops and disseminates aircraft material readiness reports.
- Performs cognizance and policy control of the Central Technical Publication Library.
- Coordinates scheduling of D-level repair for aircraft, systems, engines, and SE.
- Performs cognizance and policy control of the IMRL program.
- Coordinates the assignment of personnel in the 60/61XX occupational fields.
- Coordinates with the Aviation Information Systems Branch on changes/updates to MALSP and the use of the T-AVB.

Aviation Supply Branch

Primary branch responsibilities include coordinating aviation material (inventory management, distribution, storage, and transportation) and financial matters, training, and related programs in support of squadrons assigned within subordinate MAGs. The AVNSUPO and staff are the principal points of contact for coordinating aviation supply matters between the aircraft TYCOM, CG MAW, and the assigned MAGs. The branch also—

- Implements and coordinates aviation supply policy within the MAW.
- Coordinates with MAW comptroller on all matters concerning operations, maintenance, and Navy expenditures.
- Conducts liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinates aviation material support for ship and unit deployments.
- Coordinates the assignment of personnel in the 6602, 6604, and 6672 MOSs.
- Analyzes aviation supply and financial management performance.
- Monitors weapons system material support transitioning from commercial supply to Navy supply.

- Coordinates with the Aviation Information Systems Branch on policy development input to higher HQ for changes/updates to NTCSS and other aviation information systems.

Avionics Branch

Primary responsibilities of the avionics branch include managing all avionics policy matters and readiness issues within the wing. The branch also—

- Manages all MF and supporting equipment and coordinates the procurement and distribution of MF assets between higher and lower echelons.
- Maintains a serialized inventory of selected electronic countermeasures equipment and coordinates its assignment to units within the wing.
- Coordinates the assignment of personnel in the 63XX/64XX occupational fields.
- Coordinates engineering technical services with supported MAGs, local Naval Air Technical Data and Engineering Service Command, and TYCOMs in support of operational units.
- Coordinates with senior and subordinate HQ to ensure supported operational units have custody of required aircraft mission-essential equipment.
- Coordinates between senior and subordinate HQ to ensure prompt verification of rapid action minor engineering changes.
- Coordinates and provides oversight to calibration services performed by subordinate units.

Aviation Ordnance Branch

The primary responsibility of the aviation ordnance branch is managing class V(A) munitions and serving as the principal point of contact for coordinating aviation ordnance matters and policy between the supported MAGs and the functional TYCOM. The branch also—

- Monitors the NCEA provided to sustain the supported MAGs.
- Manages aircraft armament equipment (AAE) prime pool under the cognizance of the functional TYCOM.

- Coordinates the assignment of personnel in the 65XX occupational fields.
- Monitors the Aviation Ordnance Certification/Qualification Program as administered by subordinate commands.
- Monitors the Explosives Safety Program as administered by subordinate commands.
- Registers class V(A) ammunition allowances via CAIMS to monitor, review, and provide guidance to subordinate commands for inventory management, inventory accuracy, accountability, and reporting of class V(A) materiel.
- Assists the G-3 in compiling testing and training requirements from subordinate commands for submission to higher HQ.
- Monitors matters concerning both ROLMS and AITS.
- Monitors, reviews, and provides guidance to subordinate commands for arms, ammunition, and explosives security.
- Conducts class V(A) ammunition deliberate/contingency planning in support of OPLANs.
- Represents the COMMARFORLANT and COMMARFORPAC as a member of executive working group committees charged with review of publications concerning aviation ordnance SOPs and explosive safety manuals.

Aviation Logistics Plans Branch

Primary responsibilities of the AVLOG plans branch include developing, coordinating, and assessing the AVLOG elements TPFDD required for deliberate and crisis-action war plans. The AVLOG plans officer and staff are the points of contact between the MALS and the MEF. They provide the key information on CSP data, lift

requirements, and AVLOG phasing into theater. Other key areas of responsibility are as follows:

- Coordinating MAW policy development input to higher HQ for georepositioning programs.
- Coordinating MAW policy development input to higher HQ for updates to the MAGTF logistics automated information system (LOGAIS) family of systems.
- Coordinating MAW policy development input to higher HQ for updates to MALSP doctrine to include the use of the T-AVB.
- Reviewing the concept of operations with the wing G-3/plans and determining the MALS concept of support based on guidance received from the MEF on current and future OPLANs/CONPLANs.
- Developing force deployment planning and execution (FDP&E) options with deliberate planning.
- Providing the input for the MEF/Marine component commanders AVLOG annex.

Aviation Information Systems Branch

Primary responsibilities of the Aviation Information Systems Branch include managing all AIS policy matters, coordinating information systems matters between assigned MAGs, MAWs, and TYCOMs. The branch also—

- Implements and coordinates AIS policy within the MAW.
- Coordinates with MAW G6 on all matters concerning information technology employment and policy
- Coordinates AIS support for ships and unit deployments.
- Coordinates assignment of MOS 6694 personnel.
- Conducts liaison with external agencies in support of AIS.
- Coordinates with all MAW logistics branches on policy development input to higher HQ for changes/updates to NTCSS and other AIS.

CHAPTER 3

MARINE AVIATION LOGISTICS SQUADRON

The MALS provides AVLOG support; i.e., aviation-specific maintenance and supply, for subordinate units of an FW or RW MAG. The MALS—

- Conducts intermediate maintenance on aircraft and aeronautical equipment.
- Provides aircraft supply support.
- Assembles and distributes class V(A).
- Manufactures cryogenics for supported units.
- Provides Navy-specific supply support to the MWSS EAF and weather sections.
- Requires motor transport and engineering support from the MWSS to conduct class V(A) distribution and establish MF sites.

Each MALS, Active or Reserve, can perform the following core functions:

- Provide I-level maintenance for aircraft and aeronautical equipment of all supported units; when authorized, perform first-degree repair on specific engines.
- Provide aviation supply support for aircraft and Navy-funded equipment to all supported units.
- Provide class V(A) ammunition logistics support to ACE squadrons. This support encompasses the requisitioning, storage, handling, assembly, transportation, and inventory management reporting of class V(A) ammunition. Be capable of planning for and operating an ammunition issue point at expeditionary sites.
- Interpret, implement, audit, inspect, and provide oversight for the MAG CO for all policies and procedures relating to the administration and management of operations and maintenance, Navy (less temporary additional duty funds), aviation supply, aircraft maintenance, aircraft ordnance, avionics, cryogenics, and data processing for all units within the MAG/ACE.

- Coordinate with the MWSG/MWSS, Marine air control group (MACG) and other supporting Navy and Marine Corps activities in planning for the support required to execute AVLOG.
- Screen and inspect nonserviceable aeronautical equipment/material for testing and repair, shipment to another repair facility or disposal.
- Maintain the capability to deploy and provide MALSP packages as integral units or as tailored AVLOG elements assigned to another MALS to support aircraft assigned to a “host” MAG/MALS or ACE.
- Conduct individual and unit training to qualify organic and supported squadron personnel for performance of assigned missions and tasks.
- Provide data processing support to facilitate execution of the aviation supply, maintenance, and Navy-funded financial functions of the MAG/ACE.

Marine Aviation Logistics Squadron Maintenance Department

The AVLOG functions of the MALS maintenance department include aircraft, avionics, SE maintenance, flight equipment, cryogenics, aviation ordnance, and maintenance data collection and analysis. All available talents and resources are used to ensure components are repaired to the highest standard of quality to further enhance the warfighting capabilities of the customer (the tactical squadrons). Specific responsibilities are as follows:

- Coordinate control of aircraft maintenance performed by, and in support of, squadrons and units under the cognizance of the MAG CO, and materiel condition and combat readiness of assigned weapons systems and equipment.

- Conduct liaison among squadrons, stations, MAWs, and other activities in connection with maintenance or materiel matters.
- Ensure squadrons within the MAG provide augmentation personnel on a temporary additional duty basis as required for training in the maintenance of organic systems and subsystems by the I-level.
- Coordinate predeployment planning for the provisioning of personnel, facilities, SE, and services for supported squadrons.
- Screen supported deploying squadron materiel to ensure only materiel considered essential to support the specific deployment is embarked, and consolidation of multiple squadron requirements is made whenever possible.
- Screen appropriate MALSP IMRL allowances to ensure they are tailored to support the quantity and type aircraft assigned to the MAG squadrons.
- Ensure the MAG aircraft assignment board (or equivalent) is maintained and reflects current status.
- Maintain liaison with supported squadron maintenance material control centers and the aviation supply department (ASD), and ensure adequate validation and reconciliation of outstanding requirements takes place.
- Monitor MAG squadrons to ensure an effective maintenance program is being conducted.
- Monitor MAG squadrons to ensure an active and effective quality assurance monitoring program exists.
- Monitor MAG squadrons to ensure correct maintenance, administration, and material handling procedures are used, directing particular attention to the detection and removal of all administrative impediments to aircraft readiness.
- Perform joint aircraft inspections periodically with squadron maintenance officers.
- Assist squadrons in obtaining engineering technical assistance.
- Coordinate with other staff organizations to ensure maintenance facility requirements for both MALS and the O-level are updated and submitted as required.
- Coordinate the assignment of aircraft parking spaces within the MAG with the MAG S-4.
- Ensure an aggressive and effective management program is in place to control cannibalization of aeronautical equipment. To the maximum extent possible, ensure selective cannibalization actions are planned to prevent aircraft from being in a nonflyable status for more than 30 consecutive days.
- Ensure inter-MALS liaison is maintained for repair of components in the secondary repair site program.
- Coordinate D-level drive-in or field modifications of assigned aircraft.
- Ensure an effective program is in place to perform a quarterly review of the MALS individual component repair list.
- Conduct regular meetings, chaired by the maintenance officer and cochaired by the AVNSUPO, with supported units to ensure optimum communication and coordination.
- Analyze the mission accomplishment and capabilities of the department using reports provided by the MDS on a continuing basis.

Avionics Division

The avionics division provides maximum support, coordination, and leadership to the MALS' mission in the areas of aircraft maintenance, avionics equipment maintenance, integrated logistics resource management, and professional personnel development. Management of the MALS avionics division is the responsibility of the MALS avionics officer. This is accomplished by interpreting and implementing avionics policies and procedures for the MALS commander.

All maintenance and support of MALS and supporting activities, avionics equipment—to include weapons repairable assemblies, shop repairable assemblies, SE, test measuring and diagnostic equipment, and “Navy funded” computers and peripherals—will be performed by personnel assigned within the avionics division. These functions encompass programs, equipment,

and support for activities both internal and occasionally external to the MAG. The avionics division, responsible to the maintenance officer, has the overall responsibility for the production effort within the MALS, on matters dealing with the scheduling, prioritization, and production of avionics equipment.

An avionics division exists within each MALS and consists of the following functional branches: avionics branch, precision measurement equipment branch, and various production branches necessary to support flying squadrons of a MAG. Each branch is responsible for the maintenance of its avionics equipment, the welfare of its personnel, an accurate accountability of work center IMRL assets, and individual branch security. The avionics branch is responsible for overall division administrative duties and I-level maintenance on avionics equipment. Depending on the type of aircraft supported, the avionics branch may contain up to five work centers: communications/navigation, electrical/instrument repair, automatic test equipment, electronic warfare, and radar.

Aviation Ordnance Division

The function of the aviation ordnance division is to provide the MALS with logistical and management support of class V(A) ordnance, AAE, and armament weapons support equipment (AWSE). This is done by interpreting and implementing the ordnance policies and procedures for the MAG. The MALS ordnance staff—

- Ensures the management and distribution of authorized NCEA.
- Assists the MAG (G-3) in developing testing and training requirements for aviation ordnance.
- Ensures proper logistical support and storage requirements for prepositioned war reserve materiel requirements assets are identified, including buildup and delivery of class V(A), ammunition stock points, advanced bases, and forward arming and refueling points.
- Manages the MAG's ordnance safety program and ensures explosive safety policies and procedures are issued as required.
- Ensures compliance with the policies and procedures set forth in OPNAVINST 8000.16A, *Naval Ordnance Maintenance Management Program (NOMMP)*, when preparing quality deficiency reports, explosive mishap reports, technical publication deficiency reports, and engineering investigation requests.
- Ensures class V(A) materiel is managed per the current revision of NAVSUP P-724, *Conventional Ordnance Stockpile Management Policies and Procedures Manual*, and other related directives.
- Establishes and monitors the handling, qualification, and certification program for nonnuclear aviation ordnance and nonnuclear explosive devices for the MALS.
- Establishes and maintains a satellite production control work center.
- Analyzes division production and readiness using reports provided by the MDS.
- Ensures satellite production efforts support the maintenance department's goals, objectives, and standards.
- Publishes a monthly maintenance and training plan for airborne weapons, training assets, AWSE, AAE, and formal in-Service training of aviation ordnance personnel.
- Ensures all maintenance performed on the AAE pool and AWSE is per the standards and guidelines established by the MALS maintenance department.
- Provides information on manpower, equipment, class V(A) materiel, and facilities to appropriate authorities.
- Establishes a verification program for technical manuals and directives maintained by the division.
- Establishes an AAE pool per MAW and aircraft controlling custodian/TYCOM directives.

- Ensures the ROLMS and the standardized conventional ammunition automated inventory record are used to manage class V(A).
- Monitors and coordinates nonexpendable aviation ordnance support provided by the MALSP.
- Ensures the division maintains the capability to operate from advanced bases and forward arming and refueling points.
- Coordinates predeployment planning for ordnance personnel, facilities, SE, ordnance materiel, and services to support squadrons (NAVSEA OP 5 Vol III, *Ammunition and Explosives Ashore, Advance Bases*).
- Screens squadron materiel requests and the availability of class V(A) assets to ensure only materiel considered essential is embarked.
- Ensures appropriate levels of support are identified in the TPFDD database.

Aviation Supply Department

The ASD executes all functions dealing with the inventory, storage, and management of Navy-provided materiel. The ASD staff functions include, but are not limited to, the direct responsibilities listed in the following paragraphs. An ASD exists within each MALS with physical location of the divisions within the ASD varying depending upon local situations. However, preferred locations are adjacent to the maintenance department production divisions. The hours of operation will be consistent with the operating hours of supported organizations. The functional divisions of supply response and consumable management comprise an ASD.

Supply Response Division

The supply response division is responsible for the initial screening and technical research of all requisitions assigned by NALCOMIS. The supply response division will refer consumable requisitions that cannot be filled from supply officer stores to the appropriate supply point of

entry. The supply response division is also responsible for the reconciliation and monitoring of all outstanding direct turn-over (DTO) requisitions except for custodial, pre-expended bins, and service market items.

Consumables Management Division

The consumables management division is responsible for the procurement, receipt, storage, issue, delivery, and inventory of all consumable material. The consumables management division consists of the following five branches:

- The receiving branch receipts and redistributes all material shipped to the MAG/MALS from external sources.
- The consumable delivery branch delivers all consumable issues, consumable DTO receipts, and processes related transactions.
- The consumables storage branch stores, issues, and inventories all consumable material in the supply officer's stores and is divided into the consumable storage section and the consumable issue section.
- The consumable control branch manages inventory of consumable material.
- The pre-expended branch establishes, manages, and replenishes pre-expended bin sites authorized by the AVNSUPO or maintenance officer.

Repairables Management Division

The repairables management division is responsible for—

- Repairables allowance management, procurement, receipt, storage, issue, delivery, and inventory of all repairable materiel.
- Induction and recovery of repairables into/from the Intermediate Maintenance Activity and for shipment and tracking beyond-the-capability-of-maintenance components to the appropriate activity.
- Management and control of all classified and fleet controlled materiel (repairable and consumable).

The repairables management division consists of the following five branches:

- The repairables control branch—
 - Establishes and maintains repairable allowances and is responsible for their procurement, inventory, and accountability.
 - Processes repairable requisitions and receipts with exceptions, and all repairables returned from the Intermediate Maintenance Activity.
 - Screens and tracks carcasses that are beyond-the-capability-of-maintenance.
 - Performs all duties on classified material (receipt, storage, issue, packaging, and shipment). Procedures for handling classified material are in Secretary of the Navy Instruction (SECNAVINST) 5510.36, *DON Information Security Program Regulation*, and OPNAVINST 5218.7B, *Navy Official Mail Management Instructions*.
- The repairables delivery branch delivers all repairable materiel (issues and DTO) to the customer. It also picks up all nonready for issue repairable components from the customer ensuring accuracy of all documents, i.e., logbook, scheduled removal card, and maintenance action form (MAF).
- The repairables storage branch is responsible for the receipt, issue, storage, and inventory of all repairable materiel in the supply officer's stores. The storage of repairables is broken down into two separate sections—weapons repairable assembly and shop repairable assembly.
- The awaiting parts branch stores and manages repairable components awaiting repair parts.
- The supply shipping branch packages and ships all aeronautical-related components and equipment.

Supply Accounting Division

The supply accounting division is responsible for all tasks related to maintaining and reporting the

financial accounts granted to the ASD. The supply accounting division consists of the following two branches:

- The end use branch maintains and reports all end use accounts allocated to the ASD, and is divided by operating target (OPTAR) funding.
- The stock fund branch reports transactions, which affect the Navy Working Capital Fund (NWCF) special accounting class (SAC) 207 inventory. It also verifies the financial processing of all transactions processed by the MALS.

Squadron Support Division

The squadron support division is responsible for receiving, processing, and monitoring all requirements for aeronautical-related custodial materiel and maintaining custody records for all organizational allowances. The squadron support division consists of the following two branches:

- The customer assistance branch receives, processes, and monitors all requirements for aeronautical-related custodial materiel.
- The custody records branch maintains the custody record cards for all organizational allowance material, such as IMRL, TBA, COSAL, controlled equipage listed in the NAVAIR 00-35QH-2 (Section H), and maintenance assist modules/test bench installations. This branch also formulates the quarterly and annual budgets and the mid-year budget review for all custodial materiel.

Supply Management Division

The supply management division is composed of the most knowledgeable and experienced aviation supply personnel responsible for monitoring the overall supply department operation, technical training, and MALSP allowances and packups (as they pertain to deployed and contingency

operations). The supply management division consists of the following two branches:

- The audit branch monitors all supply functions within the ASD to ensure compliance with authorized procedures and achievement of established goals.
- The MALSP support branch validates and loads MALSP allowances and monitors packups.

Supply Personnel and Administration Division

The supply personnel and administration division is responsible for the administrative control of all personnel assigned. The supply personnel and administration division performs clerical functions and maintains the master files of all messages, orders, correspondence, and directives for the ASD. The supply personnel and administration division consists of the following two branches:

- The supply personnel branch performs functions related to administrative control of all personnel within the ASD.
- The supply administrative branch provides clerical assistance for the ASD as directed by the AVNSUPO or the aviation supply chief.

MALS Operations Department

The MALS is a command entity similar to other Marine squadrons. The MALS operations officer is the chief advisor to the MALS CO for all matters pertaining to planning and execution of tactical operations involving ALS. The MALS operations department identifies, plans, coordinates, and supervises all operational AVLOG planning requirements.

The MALS operations department coordinates with both the parent MAG and each supported squadron regarding ALS for deployed squadrons and detachments. It also serves as the MALS point of contact for all deployment support involving the unit deployment program, L-Class/aircraft carrier (CV)/aircraft carrier (nuclear)/CVN and T-AVB/MPF

employment plans and milestone reporting. It is also responsible for AVLOG FDP&E as it relates to deliberate and CAP.

Deliberate Planning

Deliberate planning is conducted during peacetime to develop and refine war plans. Planning in this fashion allows for orderly and methodical command and staff participation in the preparation of a plan. Deliberate planning is conducted when there is ample time for detailed, methodical, and comprehensive planning and coordination. The deliberate planning process culminates with the creation and refinement of TPFDD and its placement into the JOPES. The following steps will be followed during the deliberate planning process. The MALS operations department—

- Coordinates the range and depth of AVLOG support required to support the concept of operations as defined by the MAW AVLOG plans section.
- Reviews all plans that require employment of AVLOG and class V(A) support and coordinates operational AVLOG as required to support each plan.
- Coordinates the review of OPLANs/CONPLANs with internal MALS departments.
- Determines, in coordination with consolidated administration, assignment of MALS core and augments personnel to—
 - MPS survey, liaison, and reconnaissance party, arrival and assembly operations element, and offload preparation party.
 - T-AVB.
 - CV/CVN/LHA/LHD.
 - Ashore ACE beddown airfield.

The MALS operations department also reviews each applicable deliberate plan and determines—

- If the commander's intent and end state for each deliberate plan/CONPLAN have been met.
- The employment, configuration, and coordination of arrival date of the T-AVB.

- The TPFDD flow of AVLOG assets into the theater of operations.
- Each MALS unit line number is identified on the TPFDD.
- Site survey for the MALS beddown sites.
- Geoprepositioned SE offload distribution and assignment plan.

Crisis Action Planning

CAP performed by AVLOG planners at all levels must recognize that CAP is not governed by rigid steps as it is a flexible means of coordinating staff action. However, certain conditions may be viewed as probable with respect to the preparation of deployment data in response to any crisis action situation. If the crisis is in response to a contingency for which deliberate planning has been conducted, the existing planning data can be used as a tool to develop tailored support. If the crisis is in response to a contingency for which no deliberate planning has been previously conducted, ALS must be tailored without the benefit of existing data. During CAP, the MALS operations department is responsible for—

- Recommending to the MALS CO operational priorities for the movement of MALS support.
- Acting as the MALS point of contact for the wing staff when the CAP is established.
- Coordinating the development and implementation of troop movements from home station to the sea/airport of embarkation.
- Coordinating with other MALS departments/sections to identify and tailor ALS.
- Determining priorities for MALS replacements in coordination with the S-1.
- Coordinating MALS operations security and signal security.

Aviation Information Systems Department

The Aviation Information Systems Department (AISD) provides data processing support to the supply and maintenance departments. The AISD is responsible for the administration, operation, and maintenance of all computer systems and networks

throughout the supply, maintenance, and ordnance departments. The AISD consists of the following five divisions.

- The administration division is responsible for the administrative control of all personnel assigned. Personnel within the division perform clerical functions and maintain the master files for messages, orders, correspondence, and directives for the AISD.
- The customer support division is the primary manager for customer support within the AISD. Unit/department representatives will forward discrepancies that cannot be resolved locally to the customer support division, who will then initiate the discrepancy into the maintenance cycle. The customer support division will further operate as the department issue and receive desk, production control/help desk call center, AISD asset manager, and supply/maintenance liaison, providing monitored support to the MAG relative to aviation information systems. In addition, the customer support division will substantiate and prioritize AISD requirements submitted via the supply department.
- The network administration division is responsible for the management of all AIS network resources within the MAG. These responsibilities include managing and upgrading network operating systems, data assurance, user account management, network architecture documentation and upgrade planning, network security, and workstation software standardization.
- The systems processing division provides data processing support to the supply and maintenance departments. The systems processing division is responsible for administrative and operational control of the Intermediate Maintenance Activity NTCSS systems. The systems processing division is also responsible for coordination of application workload and output to the supply applications administrator and the maintenance applications manager.
- The maintenance support division consists of AISD technicians that provide direct maintenance and installation support for all AIS and MALS core network assets.

CHAPTER 4

COMMAND AND CONTROL INFORMATION MANAGEMENT SYSTEMS

Logistics information management at the tactical level ranges from manual methods to employment of sophisticated AIS. Marine Corps aviation organizations down to the squadron level have organic AIS capabilities to manage the maintenance and logistics requirements of aircraft, aeronautical material, and aviation weapons and ordnance. Each organization has networked computer systems to support data input and processing of a myriad of information requirements. MALS/aircraft squadrons possess a variety of computer hardware suites and software applications for submitting input to and receiving output from Navy and Marine Corps support systems. As such, AIS and their communications systems are becoming seamlessly linked and are necessary for the effective management of all aeronautical assets.

The AISD supervises the MALS's/squadron's communications and information systems support operations and is responsible for the technical direction, control, and coordination of communications and information systems support tasks. There are a variety of AIS supporting naval aviation. These systems are managed, controlled, and funded by the Navy for use by and distribution to naval aviation (Navy/Marine Corps) activities and supporting establishments. The following are most of the major mission critical AIS peculiar to aviation logistics.

Naval Tactical Command Support System

The NTCSS is included in the AIS and is under the management of COMSPAWARSYSCOM. It provides a full range of responsive mission support ADP hardware and software to facilitate management of information, materiel, and funds required to maintain and operate aircraft. Specifically, NTCSS supports O- and I-levels and indirect supporting

activities' aviation maintenance management and materiel and financial management.

The NTCSS, as a family of systems, incorporates the functionality provided by the former systems of MRMS, NALCOMIS Organizational Maintenance Activity and NALCOMIS Intermediate Maintenance Activity, and SUADAPS through the functional enhancement and integration of existing legacy systems. Depending on the nature of the user site, all or some of these functions are available to afloat units, Marine Corps air stations, and MALS. The NTCSS provides tactical commanders and AVLOG managers the required mission support information for tactical decisions, improved equipment supportability and maintainability, and results in a commensurate enhancement in the materiel condition and combat readiness of aviation units.

NALCOMIS provides squadrons (O-level), activities, and MALS (I-level) with a modern, real time, responsive, computer-based management information system. The three objectives of NALCOMIS are as follows:

- Increase aircraft and aeronautical equipment readiness by providing local maintenance and supply managers with timely and accurate information.
- Reduce the administrative burden on the fleet.
- Improve the quality of upline reported data.

NALCOMIS Organizational Maintenance Activity

NALCOMIS Organizational Maintenance Activity provides effective AIS capability to satisfy various functional requirements of the NAMP. It is a management information system designed to provide Marine Corps O-level activities with timely and accurate information for day-to-day

management of assigned aircraft and equipment. NALCOMIS Organizational Maintenance Activity allows the organization the capability to manage maintenance and supply processes by allowing systems users to enter, collect, process, store, review, report, and interface required data. These detailed processes are in support of—

- Aircraft, engine, assets, EAF components, and SE repair.
- Materiel requisitions.
- Direct and indirect support materiel control.
- Personnel, aircraft, and equipment assignment and deployment.
- Subcustody of equipment.
- Utilization of resources.
- Additional actions at the O-level.

The major functions required by the O-level are integrated into one system sharing a common database. This approach avoids redundancy of functions and related data within the organization. It also serves to improve the overall communication and response time associated with multiple databases. The major functions of NALCOMIS Organizational Maintenance Activity are divided into eight subsystems and two utilities.

Subsystems

- Database administration subsystem allows the O-level to establish and maintain system level support tables. These tables provide the baseline data for the O-level, database application security, and data tables.
- Maintenance subsystem collects and processes maintenance related data and provides this data to other subsystems on the database.
- Flight subsystem collects and processes flight related data and provides this data to other subsystems on the database.
- Logs and records subsystem provides the ability to establish and maintain configuration profiles on aircraft, engines, modules, and components assigned to the O-level.
- Asset subsystem provides the ability to inventory and process inspection-related data on O-level assigned assets, for example, aeronautical equipment, SE, IMRL, EAF equipment, and Aviation Life Support System.
- Data analysis subsystem provides the O-level 3M analyst with the ability to approve MAFs and flight records for upline submission to the data services facility; correct, delete, and reinduct MAFs and flight documents; perform end-of-month MAF closeout processing; and generate MAF audit reports.
- Technical publications subsystem reserved for future use.
- Reports subsystem provides the ability to select and produce reports.

Utilities

- Ad hoc query utility provides the ability to create reports to meet the users specific needs. The reports may be derived from selected database tables allowing the manager to gather data in various areas; for example, aviation 3M reports, flight reports, trend analysis, manpower utilization, user login identification, special maintenance qualification assignments, and specific workload reports.
- The system administrator management menu utility provides the ability to the system administrator/analyst to maintain the system configuration. The system administrator management menu includes—
 - Application administration.
 - System utilities.
 - Detachment processing.
 - Mail/messages facility.
 - Printer management.
 - Process status.
 - System initialization.
 - Operating system security management.
 - Queue management.

NALCOMIS Intermediate Maintenance Activity

NALCOMIS Intermediate Maintenance Activity, used at the MALS, provides the capability to manage maintenance and supply functions and processes by allowing system users to enter, collect, process, store, review, and report information required by the organization. These processes include engine and SE repair, materiel requisitions, repairables management, awaiting parts management, personnel assignment and deployment, subcustody of equipment, use of resources, and additional miscellaneous functions at the MALS. All functions required by the MALS are integrated into one system sharing a common database. This approach avoids duplication of related data among the organizations. The common database also serves to improve the overall communication and response time associated with materiel readiness in support of aircraft maintenance activities. Internal communications among users in the MALS are accomplished through online mailbox and hardcopy report notices, which are distributed on preassigned work center printers. The major functions of NALCOMIS Intermediate Maintenance Activity in support of the MALS are divided into the following 10 subsystems containing similar processes:

- Database maintenance subsystem allows the database administration to establish and maintain data within NALCOMIS Intermediate Maintenance Activity and perform the necessary local database support functions for all subsystems. These support activities include the initial loading and maintenance of the database, purging data records generated by the application subsystems, transferring data to historical archives, and deleting outdated data. This subsystem also handles the processing of external interface data to update inventory and requisition records.
- Maintenance activity subsystem allows maintenance personnel to document maintenance actions, order parts, maintain individual component repair list data, and make inquiries. Actual documentation requirements—such as validation specifications, form descriptions, and field entry requirements—are contained in MALS and other instructions. Any NALCOMIS Intermediate Maintenance Activity-specific documentation requirements are covered in the detailed description of each function or screen. Contingency processing is included in this subsystem.
- Configuration status accounting subsystem contains three sections: aircraft engines, SE, and TDs.
 - Aircraft engine users establish and maintain a database in NALCOMIS Intermediate Maintenance Activity to contain all the information pertaining to onhand engines and their installed modules and components, as well as onhand uninstalled modules and components.
 - SE maintains a database of all information pertaining to assigned SE.
 - TDs track incorporated and nonincorporated TDs for aircraft engines, engine modules, engine components, SE, and SE components.
- Personnel management subsystem contains information on assigned military and civilian personnel. The information is used for workload management and to verify authorization for discrepancy signoffs, quality assurance inspections, MAF reviews, and other job-related functions.
- Asset management subsystem contains the functions required to maintain inventory and utilization data for SE and IMRL items.
- Materiel requirement processing subsystem covers materiel requirements generated by maintenance customers at the O- and I-levels. These requirements include repairable components, consumable repair parts, and indirect materiel support items.
- Local/upline reporting subsystem supports engine transaction records. This subsystem is reserved for future use.
- System support subsystem permits the user to see a listing of the onscreen messages that are waiting action. In addition, the system administrator uses online functions to review the requests for reports, and to release them for subsequent printing.

- Data offload/onload subsystem generates files, reports, and documents for data offload/onload. These items accompany temporarily transferred SE and personnel and permanently transferred SE, either to or from organizations.
- Technical publications subsystem provides an automated technical library tracking system.

Shipboard Nontactical Automated Data Processing Program III

SNAP III provides automated information processing support for supply, finance, and organization maintenance management to the MALS. SNAP is an umbrella program, which includes numerous applications for shipboard use.

Shipboard Uniform Automated Data Processing System

Under management and configuration control of the Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM), the shipboard uniform automated data processing system (SUADPS) is the aviation supply software application used by MALS to provide financial, inventory, and logistics management of aviation supply support for Marine aircraft. SUADPS-real time (RT) manages inventory, orders parts, provides customer services, manages finances, manages ADP; and manages necessary documents, ledgers, reports, and references. The three major functional subsystems of SUADPS-RT are logistics management, inventory management, and financial management. An additional executive subsystem is the central controller of the system and serves as primary interface with the user.

Logistics Management

Logistics management subsystem provides—

- Automated assistance for supply department material control and customer support activities.

- Online collection and maintenance of data on stock items, repairables, and requisitions.
- Online requesting of materiel by supply department customers and automated issue of materiel or creation of requisitions.
- Automation to manage offload or stock transfer.

It further automates preparation, control, recording and reporting of receipts; maintains status of all requisitions and purchases including money-value only, pushed materiel, NAVSEASYSKOM-funded initial outfitting type requisitions; and verifies acceptability of various data elements prior to admittance of new data into the system.

Inventory Management

Inventory management subsystem provides automated support for control of inventory and consists of two primary functions.

- The first function, maintenance of inventory data, establishes and maintains records that identify, locate, quantify and describe stock items. Actual materiel versus recorded materiel on hand, and materiel due versus materiel received are reconciled, and surveys, gains or losses are processed.
- The second function, computing, adjusting, and reporting inventory data, implements policies through system-wide inventory data modifications and produces management reports that summarize stock item information held as inventory data. Stocking objectives and allowances are managed within this function.

Financial Management

Financial management subsystem provides support for either manual or automated updates and information queries of all financial data maintained in SUADPS-RT. The subsystem is composed of three primary functions: providing automated support for maintaining up-to-date financial data, monitoring and controlling fund expenditures, and producing financial reports and displays. The financial management

subsystem maintains comprehensive financial records for all supply transactions, provides data for all required reports and management information queries, and provides controls to promote accuracy and validity of financial data. The two accounting methods incorporated into the financial management subsystem are the OPTAR and the NWCF SAC 207.

- OPTAR is used to account for activity operations and maintenance funds. All material and expenditures for obtaining services are expended to an annual appropriation upon issue to the unit or obligation for purchase. OPTAR accounting is also performed for any supported units.
- The NWCF SAC 207 accounting AVNSUPO has inventory and fiscal accountability for material in stock. Material in stores is held in the NWCF and upon issue is expended to an annual appropriation with reimbursement to the stock fund. Material transferred to other supply officers is retained in the NWCF and reported to the fleet accounting and disbursing center (FAADC) as expended through transfer. The FAADC reconciles transfer expenditures monthly to units involved. Formal inventory control records are maintained and simplified working capital fund returns are submitted monthly to the FAADC.

Integrated Bar Code System

The integrated bar code system (IBS) is a form of automated information technology (AIT) that applies bar code technology and automated data entry techniques to material receipt and expenditure processing, physical inventory management, configuration accounting, equipage accounting, carcass tracking, and material shipment processing. This technology improves management and accuracy of inventory control

for mission-essential items and items that require special controls or chain of custody accountability by regulation or directive. The IBS provides automated functionality to conduct inventories, location audits, and receipts processing via bar code technology, without the use of printed material. Inventories or location audits are conducted based on user determined parameters (location range, stock number or other criteria). Functionality is provided to conduct both scheduled and unscheduled inventories. The IBS also—

- Provides automated support for the performance of inventory count accuracy and quality controls auditing, prior to acceptance of the inventory results.
- Provides a capability to automate inventory reconciliation research.
- Determines stock numbers that are out of balance between stock records and inventory results.
- Queries all applicable automated files.
- Presents information found in online or printed reports.

Individual Material Readiness List

The IMRL is a consolidated list of specified items and quantities of SE required by a particular aircraft maintenance activity or activity component to perform its assigned aviation maintenance mission. The COMNAV AIRSYSCOM constructs an IMRL for all Marine Corps aviation activities by extracting SE items from the support equipment resources management information system database. IMRLs identify material requirements and provide a basis for SE procurement. This information aids decisions regarding readiness, budget forecasts, procurement requirements, and redistribution of excess assets.

Automated Support Equipment Recommendation Data

Automated support equipment recommendation data (AUTOSERD) is the primary system for data collection and transfer of aviation SE requirement and acquisition information amongst the NAVAIRSYSCOMs. It is also used by cognizant field activities and the NAVICP Philadelphia, previously known as the aviation supply office, Mechanicsburg, PA.

SE requirements are documented in support of aircraft, missiles, weapons systems, installed avionics, engines, and other systems SE for high operational readiness. One of the outputs of the logistics support analysis is a document and its associated process known as the support equipment recommendation data (SERD). The SERD is the source document for the AUTOSERD system. The SERD is a compilation of data that describes a requirement for specific items of SE. It serves as the primary data record for the design, development, integrated logistic support, and allocation and superseding (prime/alternate relationship) of SE. It describes technical and design parameters and acquisition and logistic support data to satisfy end article support requirements.

AUTOSERD is the sole source of input for requirements data to the aircraft maintenance material readiness list (AMMRL) program's support equipment resources management information system. The primary objective of the AUTOSERD system is to provide a consistent and coordinated SE requirement process and pass accurate SE source data to the support equipment resources management information system for production of IMRL. The IMRLs identify fleet activity SE requirements, provide a basis for SE procurement, and aid decisions on overall readiness posture, budget forecasts, and redistribution of assets.

Support Equipment Resources Management Information System

The support equipment resources management information system is the primary management information system supporting the AMMRL program. As directed by the OPNAV N78, support equipment resources management information system is the single source for baseline budgeting and acquisition of aviation SE for NAVAIRSYSCOM program managers and Marine SE logistics managers. The support equipment resources management information system provides a centralized and integrated database containing SE data for inventory, allowance, and rework capability and production status in a form suitable for online interactive access.

Local Asset Management System

The local asset management system is a standardized system for the management of SE at all three levels of naval aviation maintenance. The local asset management system enhances the control of inventory through upline reporting of SE assets to the support equipment resources management information system. That system contains the master database of equipment for the AMMRL program. The local asset management system also provides automated methods of tracking SE assets at the O- and I-levels.

Support Equipment Standardization System

The support equipment standardization system is designed for the maintenance management of SE at the MALS. The system provides automated methods of preventive maintenance scheduling for SE inventory records, TD compliance, and supply requisition management.

Conventional Ammunition Integrated Management and Retail Ordnance Logistics Management Systems

These systems manage and control naval aviation ammunition, ordnance, and explosives.

The MALS/squadron ordnance technicians and managers use the CAIMS as it provides online inventory management data such as ammunition location, quantity, materiel condition, purpose code, and requisition status. It is the Navy's single source database inventory tool and supports life cycle management of class V(A) materiel.

The ROLMS is a personal computer-based inventory management tool designed to provide automated ammunition requisitioning, status accounting, and inventory management capability at the MALS/ammunition supply point level. The ROLMS also provides the capability to interface with the CAIMS via naval message from expeditionary sites. It is the principal system used to provide visibility of class V(A) and class V(W) at the user level, and is a feeder system to the CAIMS. The ROLMS is currently replacing the fleet optical scanning ammunition marking system for class V(A).

Streamlined Automated Logistics Transmission System

Aboard a T-AVB or at an expeditionary shore site, the MALS accumulates data from various sources within the activity; i.e., requisitions from the SNAP, SUADPS, and NALCOMIS. Each data file is assigned a unique name and then digitally compressed to about one-third its original size. The data is then encrypted and transmitted to the streamlined automated logistics transmission system (SALTS) central at NAVICP Philadelphia. If the data is transmitted via an international maritime satellite (INMARSAT), it is received at an INMARSAT downlink in Connecticut or Cali-

fornia, then transmitted over telephone lines to NAVICP Philadelphia.

The SALTS can also be used with regular telephone lines or DOD networks. At NAVICP Philadelphia, the data is sent to the intended recipient using any of several networks, including the Defense Data Network and Internet. A shore activity can transmit data, such as status of requisitions, back to the originator via the SALTS to the SALTS central. The data is placed in an electronic "post office box" and automatically downloaded to the activity the next time it calls in to the SALTS. The SALTS is available 24 hours a day and has a 100 percent audit trail. Program enhancements are distributed electronically and installed automatically by the SALTS.

MAGTF-LOGAIS Relationships

The following family of logistics AIS is used by MAW/MALS AVLOG planners and embark representatives while developing TPFDD in support of deliberate planning and CAP. While designing FDP&E plans, Marine AVLOG planners use data from the support equipment resources management information system, SUADPS, and other databases to develop TPFDDs in support of OPLANs. See figure 4-1 on page 4-8.

MAGTF II

MAGTF II is a personal computer-based planning system able to respond to a wide variety of operational requirements. MAGTF II provides planners with an automated tool enhancing the planning process of a deploying force and accelerating the capability to develop and source for a TPFDD. The system is designed to improve and condense the operational planning process through interactive design and database methodologies. MAGTF II is used for deliberate planning and CAP as well as exercises. Planners may develop force structure, tailor force lists, compute sustainment, estimate and plan lift requirements, and generate

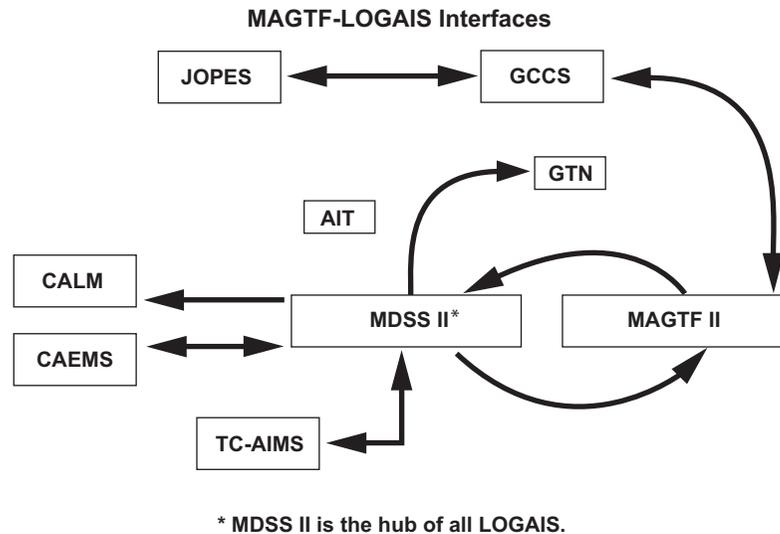


Figure 4-1. MAGTF-LOGAIS Relationships.

TPFDDs. Extensive reference files and code tables are rapidly accessible to the planner, and a variety of reports and graphs assist in the analysis and refinement of feasible plans. MAGTF II also acts as a “deployable JOPEX,” enabling the planner to communicate with JOPEX to transmit or receive TPFDD information. Plans may be downloaded from JOPEX to MAGTF II, modified, and transmitted to other LOGAIS systems.

MAGTF Deployment Support System II

MAGTF Deployment Support System II (MDSS II) is an AIS capable of supporting rapid military deployment anywhere in the world. MDSS II provides commanders at various echelons of the MAGTF the ability to—

- Provide a unit level database capable of supporting rapid deployment of forces.
- Build and maintain a database containing force and deployment data. Retrieve information in near real time in the form of reports and ad hoc queries.
- Use AIT to collect data and track equipment.
- Interface with external databases, such as asset tracking logistics and supply system (ATLASS), universal design, circumpolar active

layer monitoring (CALM), and MAGTF Data Library (MDL).

This data can be maintained during normal day-to-day garrison activities and updated during plan development and execution. Extracted MDSS II data provides the Joint Chiefs of Staff (JCS) and the President and/or Secretary of Defense with an accurate picture of the MAGTF composition, to include the sealift and airlift requirement, by passing the data through the MAGTF II and the Transportation Coordinator’s Automated Information for Movement System (TC-AIMS).

Transportation Coordinator’s Automated Information for Movement System

The TC-AIMS is an operations-oriented member of the MAGTF II-LOGAIS family of deployable, mutually supporting systems. The TC-AIMS provides the unit commander with the automated capability to plan, coordinate, manage, and execute movements at the tactical and operational levels, or at origin, from origin to point of embarkation, from point of debarkation to destination, and at destination. The TC-AIMS can produce military shipping transportation and management

program (MILSTAMP) documentation such as transportation control and movement documents (TCMDs), ocean cargo manifests, and military shipping labels. The TC-AIMS can also produce special reports and forms for shipping hazardous materials. This feature allows the TC-AIMS to interface with strategic intransit visibility systems, such as the global transportation network (GTN) and the warfare planning system.

MAGTF Data Library

The MDL is a master data reference source, maintained by the CG, Marine Corps Logistics Base, Albany, GA. It provides standardized reference data including T/Os, tables of equipment (T/Es), and dimensional information. Through MAGTF II, the data hosted within MDL operates the programs. MDL provides a source of quality technical reference data for the LOGAIS family of systems. MDL sources data for over 134 tables from various military information systems. Current resources include the JCS, US Transportation Command, the National Imagery and Mapping Agency, and other Service agencies.

T-AVB Automated Load Planning System

T-AVB Automated Load Planning System (TALPS) takes the place of the computer-aided embarkation management system (CAEMS) as the primary AIS for the embarkation of MFs aboard the T-AVBs. TALPS uses state of the art artificial intelligence to accomplish the load planning process, from initial planning to final printing of the load plan. The system considers a myriad of T-AVB peculiarities to ensure operational capability of selected MFs while underway.

Joint Planning and Execution Community

The joint planning process involves two or more US Military Services, with a designated overall commander. Roles are designated; OPLANs and

operation orders (OPORDs) are published. Combatant commanders use the JOPES to determine the best method to accomplish an assigned task and to direct the actions to accomplish the mission in deliberate planning or crisis action situations. OPLANs and OPORDs are published in JOPES format using the global command and control system.

Within the joint planning and execution community, Marine aviation logisticians are involved in training, preparation, movement, reception, employment, support, and sustainment of AVLOG assets assigned or committed to a theater of operations or objective area. Information flow in joint planning, regarding a new or current OPLAN, usually involves large volumes of information that normally flows downward and requires good two-way communications. Commanders at each level prepare supporting plans for the next higher level's supporting plan. Thus, force requirements flow down, and the plans to support those requirements flow up. Along with the plans to support the OPLAN, lift requirements flow upward. Units state how much lift (i.e., personnel, supplies, and equipment) cannot be moved by organic assets; MAGTF elements consolidate unit requirements; and MAGTFs consolidate element requirements and forward them to the supported commander or Navy component commander. Information on how lift requirements will be satisfied flows downward.

Joint Operation Planning and Execution System

The JOPES enables supported commanders, supporting commanders, and the US Transportation Command to manage deployment of forces and follow-on sustainment for both training and contingencies. JOPES is a deployment information system that assists in the development and consolidation of deployment data required for time-sensitive and execution planning, and monitoring of deployments upon execution. This system provides a comprehensive deployment

picture to the President and/or Secretary of Defense, JCS, Military Services and the supported MAGTF commander. It allows for timely decisions based on the evolving situation and force flow.

Global Command and Control System

The voluminous planning and execution information generated by joint task forces (JTFs) are supported by the global command and control system and can be conducted using the MAGTF-LOGAIS family of systems, with the results uploaded from MAGTF II to JOPES. The global command and control system was developed to replace the worldwide military command and control system as part of command, control, communications, computers, and intelligence (C4I) systems and applications. The global command and control system improves the joint warfighter's ability to manage and execute humanitarian, crisis, and contingency operations, and provides a means for integration of Service and agency C4I systems. It covers the range of military operations from routine peacetime operations to nonnuclear war. The concept builds on lessons learned from previous conflicts, operational requirements, the effects of rapidly changing technology, and directions of a changing national secu-

rity strategy. For the Marine Corps, this means that force planning and execution can be conducted using the MAGTF-LOGAIS family of systems and the results uploaded from MAGTF II to JOPES via the global command and control system.

Global Combat Support System

The global combat support system is not a discrete system but is an overarching capability. Its goal is to provide universal access to information and interoperability of that information within logistics and other support functions. Ultimately it will share this information with other C2 systems to contribute to the combatant commander's common operational picture. The global combat support system encompasses six essential attributes: any box, any user, one net, one picture, common services, and robust communications architecture. The global combat support system consists of applications and shared data riding on a common operating environment linked through a global network. Its ultimate result will include near real-time C2 of the logistics pipeline from battlefield to sustaining base, one fused picture of combat support to the warfighter, and a closed link between operational C2 and logistics C2.

CHAPTER 5

PLANNING

This chapter provides a strategic level overview of the AVLOG supporting establishment planning organizations and the basic process and fundamentals under which they operate. Key AVLOG operational level planning considerations are then linked to the intricate tactical AVLOG planning considerations used when developing an AVLOG concept of support for an expeditionary ACE.

Principles

AVLOG planning is guided by a set of overarching principles. Each plan, action, organization, report, procedure, and piece of equipment may be defined and measured in terms of these principles. Each logistics decision is guided by applying these principles. They apply to all military logistics and provide the common foundation of joint and Marine Corps logistics doctrine. The operational commander (who needs to know the effective limits of the available logistics support) and the logistics planner (who has to ensure that all the essential elements of the logistics system are incorporated) must understand these seven principles. See figure 5-1.

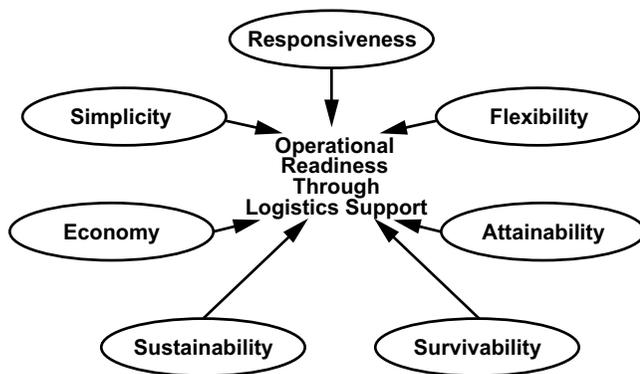


Figure 5-1. Principles of Logistics.

- **Responsiveness.** Providing the right support at the right time and at the right place.
- **Flexibility.** Adapting logistics support to changing conditions.
- **Attainability.** The ability to acquire the minimum essential logistics support to begin operations.
- **Survivability.** Ensuring the functional effectiveness of the logistics infrastructure in spite of degradation and damage.
- **Sustainability.** Ensuring adequate logistics support for the duration of the operation.
- **Economy.** Effective employment of logistics support assets.
- **Simplicity.** Avoiding unnecessary complexity in preparing, planning, and conducting logistics operations.

Strategic Level Aviation Acquisition

Acquisition and logistics planning for aircraft/aeronautical equipment, SE, and airborne weapons systems is conducted by selected naval systems commands such as NAVAIRSYSCOM or NAVSEASYSYSCOM. The individuals who oversee the myriad of functions required to provide complete logistic support through the life cycle of a system are known as assistant program managers for logistics (APMLs) or logistics managers (LMs).

System Acquisition

The aviation system acquisition process is structured in discrete logical phases separated by major decision points called milestones. New major defense acquisition programs are directed in appropriate DOD regulations.

Mission Need Determination

When DOD department heads determine a new capability is required to meet a perceived mission need, a mission needs statement (MNS) is submitted to the Joint Requirements Oversight Council (JROC). If the identified mission need is valid, the MNS is approved and a priority is assigned.

Integrated Logistic Support Plan

The integrated logistics support plan (ILSP) is developed from the operational and aircraft/aeronautical equipment maintenance concepts. Analyses are made of these plans and an orderly program is developed to support the system throughout its programmed life cycle. The programmed life cycle is divided into the following phases:

- Program initiation.
- Concept exploration.
- Demonstration/validation.
- Full-scale development.

Each phase includes consideration of the logistics requirements for—

- Facilities.
- Repair parts/spares.
- SE.
- Preservation and packaging.
- Technical data.
- Engineering, technical, and contractor services.
- Personnel and training.

Maintenance Plans

Maintenance plans are concise descriptions of maintenance requirements that drive all logistics elements. These plans are developed and compiled for designated aircraft, their related systems, and other selected items of equipment. It is NAVAIRSYSCOM policy to develop, issue,

and maintain maintenance plans for aircraft/aeronautical equipment, airborne weapons systems, EAF equipment, and SE. The maintenance plan establishes and delineates the repairable components and maintenance requirements of a selected system. For each repairable component, the maintenance plan identifies the maintenance level (O, I or D) authorized to perform the maintenance action indicated, and estimates the frequency of component failure or repair action. Maintenance plans provide the interface between maintenance, engineering, and supply for provisioning purposes and communicate inputs to enable other LMs to develop their hardware support requirements.

Logistics Requirements Documentation

Several key documents, derived by naval aviation planners at the Service and system command levels, document logistics requirements of aircraft platforms and key logistics programs in support of MALSP and georepositioning programs.

Weapon System Planning Document

The weapons system planning document (WSPD) is a basic policy and planning document, published by COMNAVAIRSYSCOM, and provides direction and guidance for program planning, budgeting, and execution in the development, acquisition, operation, and logistics support of aircraft and airborne weapons/equipment. The planning data is used by COMNAVAIRSYSCOM, program executive officers, system commands, NAVICP, and other field activities and fleet commands. The WSPD includes the following:

- Planned procurements.
- Delivery schedules.
- Systems inventories and inventory objectives.
- Base loading data.
- Test and evaluation plans.

- Supplemental and contingency support requirements.
- Rotational site support.
- Shipboard support.
- Planning factors.
- Authorized weapons expenditures.
- Material support and training policies.
- Training equipment plans.
- MFs.
- Related logistics support planning information.

To ensure congruity, it is essential that the various organizations involved in these actions utilize the common planning base provided by the WSPD. WSPDs, prepared and published by COMNAVAIRSYSCOM, are notices for Navy and Marine Corps aircraft and airborne weapons/equipment, which are either undergoing major modifications or are included in the future years defense program. WSPDs are revised periodically to reflect significant changes that occur in the programs. These changes are coordinated with HQMC Aviation Plans, Policy, and Procedures Branch, Aviation Weapons System Requirements Branch; HQMC ASL; and with OPNAV (N78) prior to issuance. Within the WSPD, and based upon numerous factors, spare parts, MFs and SE requirements in support of MALSP are identified. In conjunction with the MALSP program planning document (PPD), these documents identify the ALS elements required of all tactical Marine aircraft.

Program Planning Document

The PPD is a basic policy and planning document, published by COMNAVAIRSYSCOM and produced to give direction and guidance necessary for the acquisition and operational support of Naval Air Systems and equipment. These documents are

used by NAVAIRSYSCOM, NAVICP, NAVAIRSYSCOM field activities, and fleet commands for support planning, budgeting, and other actions related to procurement, distribution, provisioning, replenishment, and maintenance of the system and equipment. PPDs include—

- Quantitative planning data concerned with procurements, delivery schedules, installation schedules, inventories, and planning factors.
- Policy statements concerned with material support, training, and maintenance.
- Other related planning data, as appropriate.

PPDs are revised to reflect significant changes that occur in a program. Addressees assist in ensuring that the PPD presents a viable, useful plan by reviewing the planning data for accuracy and apprising HQMC ASL of recommended revisions. Each PPD represents the CNO's and CMC's approved plan for a given system. Before issuance, the PPD is submitted to the cognizant offices within OPNAV, HQMC, and NAVAIRSYSCOM activities for concurrence. The three Marine Corps programs published as PPDs are as follows:

- MALSP.
- MPS/aviation support equipment program.
- Norway Air-Landed Marine Expeditionary Brigade (NALMEB)/aviation support equipment program.

Budgeting and Funding for War Reserve Materiel

The responsibility for programming, budgeting, and funding for aviation-peculiar war reserve materiel (WRM) differs from that of ground-common materiel. HQMC DC/A is responsible for coordinating all AVLOG, including determining requirements and sponsoring development and acquisition of aviation-specific end items. The DC/A reviews

the Navy budget process to ensure that approved Marine aviation programs are correctly reflected in the future years defense program and the annual DOD budget. Specific aviation WRM responsibilities include—

- Participating in the CNO's nonnuclear ordnance requirement (NNOR) process for determination of class V(A) WRM requirement.
- Providing updated data elements for Marine Corps aircraft and aviation activities to use in NNOR process model computations.
- Assisting the Navy program/acquisition sponsor for designated WRM stocks.
- Coordinating class V(A) requirements for MPF and landing force operational reserve materiel on amphibious shipping and the appropriate distribution of assets held at DOD class V(A) materiel stock points.
- Withdrawal of WRM stocks.

Establishing the Maritime Prepositioning Force Ashore

An MPF operation is the rapid deployment and assembly of a MAGTF using a combination of strategic airlift and forward-deployed MPSs. MPF operations are strategic deployment options that are global in nature, naval and/or joint in character, and suitable for employment in a variety of circumstances. As such, MPF operations provide an essential element in the conduct of national military strategy. MPF operations consist of the airlift of MAGTF and Navy support element personnel, with some associated equipment, into an arrival and assembly area to join with equipment and supplies carried aboard MPSs.

Regardless of the mission assigned for subsequent operations, the following conditions are required to establish the MPF MAGTF ashore:

- A permissive environment from initiation of strategic deployment through completion of arrival and assembly.
- Adequate strategic airlift and aerial tanker support.
- Adequate offload forces; i.e., MAGTF and Navy support element, to support the operation.
- Sufficient airfield space for the ACE aircraft, AMC, and CRAF operations and throughput capability to support the intended airflow.
- Ample port/beach area for timely offload and throughput. The port must have sufficient water depth, adequate overhead clearance, and maneuver room to permit loading/discharging MPSs. Beaches and approaches must be evaluated for hydrographic supportability, and swept for mines and other hazards.
- Suitable transportation network between the port and/or beach, airfields, and assembly areas to permit a timely arrival and marrying-up of airlifted units with sea-lifted equipment and supplies.
- Force protection.

Concept of MPS Squadron Aircraft Support

The three key logistical support elements spreadloaded among each MPS squadron (MPSRON) are aviation SE, class V(A) ordnance, and EAF assets. The following describes how these assets, combined with others aboard the FIE, provide complete logistics support during the first 30 days of an MPF operation.

Each MPS contains tailored O-level common support equipment, peculiar support equipment, and minimal I-level common support equipment to support the MPF MAGTF preassigned mix of aircraft. When deployed, each ACE will provide tactical air support for a MEB. Each MAGTF will have the capability for independent deployment or, if the situation dictates, the ability to join up and be composited to form a larger force.

ACE FW/RW aircraft will be flight ferried directly to the theater of operations supported by AMC aerial tankers and cargo aircraft. The remainder of the FIE will be flown into the theater of operations via AMC/CRAF aircraft and will include—

- Squadron personnel; i.e., maintenance and support crews.

- Representative FISPs contained in MFs.
- O-level SE; i.e., noncustody coded items (N-coded).
- Minimal I-level SE required for initial aircraft maintenance operations; e.g., tow tractors, mobile electric power carts or hydraulic servicing carts.

Upon arrival and offload of MPSs, each aircraft squadron assigned to the MEB ACE, will “link-up” and take custody of the remainder of the common support equipment/peculiar support equipment and class V(A) required to operate and maintain their respective aircraft. Each MPSRON contains a tailored SE account for each type of aircraft assigned to the MEB ACE, which is comprised of SE custody coded items P, L, and M. When the SE loaded aboard the MPS is linked up with the aviation SE transported into the theater of operations via the FIE, it comprises all common support equipment/peculiar support equipment required to operate each T/M/S aircraft during the first 30 days of combat.

Each MPSRON also includes minimal FW and RW facility equipment (FE) contained in MFs. This FE or I-level SE supports I-level support functions common to FW and/or RW aircraft; i.e., tire/wheel build-up, battery maintenance, cryogenics, etc. The FE loaded aboard the MPS is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS via the T-AVB. Each host MALS will deploy with a tailored I-level CCSP and a PCSP required by each type aircraft the MALS is designated to support. Upon the establishment of the host MALS in the theater of operations, each MEB ACE will be capable of sustained combat operations for up to 90 days.

EAF equipment is embarked aboard each MPSRON to support FW and RW aircraft. Spread loaded on three of the five ships, each has a core capability of airfield surfacing, airfield lighting, optical landing systems and aircraft arresting gear. Airfields are constructed to meet the specific needs

of aircraft and mission, and do not have to follow specific configuration requirements. EAF assets are employed under two basic concepts: as augmentation for a base (host nation or captured airfield) or as an EAF. One option would be to consolidate the assets of all three ships and build an EAF. This conceptual airfield includes—

- A 4,000 foot runway.
- Parallel taxiway.
- Hot refueling pits.
- Parking for 75 tactical FW/RW aircraft.
- Three theater lift aircraft.

Establishment of the host MALS in the theater of operations gives the MEB ACE a sustained EAF capability.

Concept for NALMEB Aircraft Support

The NALMEB is the Marine Corps’ only land-based prepositioning program that includes aviation SE and select EAF equipment (aircraft arresting gear, and optical landing systems). The NALMEB program includes SE located at two sites within Norway. Where possible, the prepositioned SE has been tailored for use in an arctic environment. The NALMEB program is relevant to the tasks and missions of the North Atlantic Treaty Organization (NATO). These tasks are outlined in NATO’s strategic concept and support continued US commitment to the defense of Norway, support for regional stability, and strategic balance in Northern Europe.

The NALMEB program has been designed to enhance Marine Corps expeditionary flexibility by providing the capability to rapidly deploy a MAGTF to regions critical to the successful prosecution of NATO member conflicts. As such, NALMEB is designed to support the deployment of a MEB-sized MAGTF using strategic airlift to Norway, arriving prior to conducting defensive operations in conjunction with Norwegian and NATO forces, to defeat the aggressor’s amphibious, airborne or conventional invasion.

NALMEB SE is comprised of tailored O-level SE and minimal I-level SE to support the ACE's pre-assigned mix of aircraft and M-21 expeditionary arresting gear. The ACE will have the capability for independent deployment or, if the situation dictates, the ability to join-up and be composited to form a larger force.

ACE FW/RW aircraft will be flight ferried directly to the theater of operations supported by AMC aerial tankers and cargo aircraft. The remainder of the FIE will be flown into the theater of operations via AMC/CRAF aircraft and will include squadron personnel; i.e., maintenance and support crews, representative FISPs contained in MFs, O-level SE, and minimal I-level SE items required for initial aircraft maintenance operations.

Upon arrival in Norway, each squadron assigned to the MEB ACE, will "link-up" and take custody of the NALMEB prepositioned SE required to operate and support their respective aircraft. The MWSS assigned to support the ACE will take custody of and install the M-21 arresting gear (as required). When the SE located in Norway is linked-up with the SE transported into the theater of operations via the flight ferry/FIE, it will comprise all SE required to operate each type aircraft during the first 30 days of combat operations.

NALMEB SE also includes minimal FW/RW FE. This FE or I-level SE supports I-level support functions common to FW and RW aircraft. The FE located in Norway is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS via aircraft or by a T-AVB. Each host MALS will deploy with tailored CCSPs and PCSPs required by each type aircraft the MALS is designated to support. Upon the establishment of the host MALS in the theater of operations, the MEB ACE will be capable of sustained combat operations for up to 90 days.

Aviation Logistics Support Ship

In addition to MPF/NALMEB, aircraft that are part of an ACE can also be supported by one (or both) of the T-AVBs. Operational planning for the use of the T-AVB entails embarkation, deployment, execution, and redeployment phases of an operation.

The T-AVB is configured to provide either an operational MALS afloat or fully loaded with MFs intended to be off loaded in the operational theater. A third configuration is maximum loading of MFs, deployment to the operational theater, partial off loading of MFs, and further operations as a seabased MALS platform. Ultimately, the chosen configuration will be dependent upon MAGTF mission requirements and commander's guidance. The T-AVB also provides for resupply in a conventional container or roll-on/roll-off configuration.

Capabilities and Modifications

A T-AVB is a C5-S-78A Seabridge class, commercial, combination roll-on/roll-off, and lift-on/lift-off cargo ship adapted by MSC for use by the Marine Corps. T-AVB-3 (*SS Wright*), is home-ported in Baltimore, MD (see figure 5-2, top view) while T-AVB-4 (*SS Curtiss*) is home-ported in San Diego, CA. See figure 5-2 (bottom view).

The Maritime Administration maintains both T-AVBs in a 5-day reduced operating status. This status allows for the transition to full operating status within 120 hours. A civilian commercial US Merchant Marine retention crew is stationed aboard each ship to monitor equipment conditions and conduct vessel maintenance and repair. When activated, the ships will be operated by the Maritime Administration under the operational command of the MSC.



SS Wright (T-AVB-3)



SS Curtiss (T-AVB-4)

Figure 5-2. T-AVBs.

A number of modifications were made to the Seabridge class ships to support an embarked operational MALS consisting of up to 300 MFs and approximately 325 Marines. Some of these modifications follow.

A high speed data communications network has been installed throughout the ship, including all berthing, open cabin spaces, and the main and second decks. Enclosed ship spaces (berthing and cabins) have 100MB/sec CAT-5 switched network outlets. Open decks have bulkhead connection points for 100 MB/sec multimode fiber optic cable connections to support MF clusters.

Cabin Structure

A new cabin structure was added to provide MALS personnel billeting and messing accommodations. The T-AVB can accommodate the ship's 41-member crew, 300 troops, and 25 senior Marine personnel.

Helo Platform

A helo deck and control station, certified for day and night visual flight rules, were added above the main deck and are capable of supporting aviation evolutions of all DOD type helicopters. The platform is located on the upper deck of the ship. It is capable of accommodating a CH-53E in all landing and take-off conditions, to include emergency parking during storm conditions. The purpose of the helicopter deck is to handle the transfer of personnel and cargo.

Power Distribution System for the MFs

MALS SE required to be operational en route will be powered in part by embarked generators connected to the T-AVB's electrical distribution system. Additionally, the ship has a 1500-kilowatt generator that provides stable power.

Diesel Fuel Marine System

These systems are for the generators that are brought onboard and operated.

Administrative Work Space

This space is for the host MALS administration, operations, and embarkation sections.

Medical Facilities

These facilities are medical treatment rooms that can provide limited emergency care, and a six-bed medical ward.

1MC Intercom System

Intercom has been added throughout the ship, including the holds that normally contain maintenance facilities.

Hazardous Materials Storage

Although the ship is not specifically configured for hazardous materials, these materials may be transported in "marine use approved" tank containers, and in lesser quantities as "mobile loaded" cargo in approved containers, provided

the containers are stored in accordance with existing codes.

Compressed Air

Outlets are available on the main and second deck. Sufficient hoses must be embarked by each work center that requires compressed/pneumatic air.

Water

Water hookups for MFs that require water; i.e., battery lockers, are located between holds four and five on the main and second decks. Hoses must be embarked by the using unit.

Mobile Facilities

The MFs (8- by 8-by 20-foot vans) used by the MALS conform to International Organization for Standardization container dimensions and are configured to perform a multitude of missions. Operational MFs can be configured doublewide when embarked aboard the T-AVB. In addition, access modules (used to gain access to MFs stowed in the lower holds) are used to access MFs that are complexed for I-level supply support aboard the ship. The MFs can be outfitted with shelves for storage or as shelters for SE. MFs required for use will be identified by serial number and special requirements (air, electricity, and water) needed within the facility to sustain operations. These requirements must be identified early in the deliberate planning process and well prior to load plan development.

Planning

Planning for the deployment and employment of T-AVB requires the development of load plans in response to existing OPLANs/CONPLANs where sizes of forces, level of conflict, and geographical location are assumed. Planning for T-AVB deployment, however, must consider several unique planning factors. AVLOG T-AVB planners must be fully integrated into the overall planning process to determine how the T-AVB may best be tailored to support mission requirements.

Activation

When request for ship activation is approved, a civilian crew is hired, systems are brought on line, and the ship sails to arrive at the seaport of embarkation for MALS loading within 120 hours of activation.

Modes of Operation

The T-AVB's unique capabilities allow the task-organized MALS to support various scenarios. The MALS will require a detachment from an MWSS and MACG for support. The three basic modes of operation for the T-AVB are operational, transport, and combination.

In the operational mode, MFs and personnel of the MALS are embarked aboard the T-AVB to provide selected, seabased and expeditionary AVLOG support to the ACE. In this mode, approximately 300 containers (MFs, reefers, flatracks, etc.) and 42 access modules can be loaded on the T-AVB; 186 of which may be fully powered and operational MFs.

In the transport mode, MFs and personnel of the MALS are embarked aboard the T-AVB to provide maximum, landbased expeditionary AVLOG support to the ACE when offloaded ashore. In this mode, approximately 684 containers can be loaded on the T-AVB; however, none of these MFs may be fully powered or operational until offloaded and "complexed" ashore.

In the combination mode, MFs and MALS personnel are embarked aboard the T-AVB to provide selected seabased and maximum land-based expeditionary AVLOG support to the ACE, simultaneously. In this mode, the number of MFs that can be loaded on the T-AVB, and the number that can be powered and operational will depend on the desired support concept required by the ACE commander.

Loading

Detailed contingency planning in support of the T-AVB is considered essential in accomplishing

the mission. Planning for each OPLAN in which the T-AVB could be activated will require separate load plans. When the T-AVB is activated, a review of the load plan will determine whether or not adjustments are required. All shortages and/or deletions/modifications must be identified, with appropriate corrective action taken. The evaluation of the load plan (developed through the use of TALPS) will require that the weights of equipment by category (MF, bulk, etc.), to include dimensions, be processed through the ship's onboard computers to determine trim characteristics of the ship. Once the load plan has been evaluated and adjustments made, any significant changes in the amount and/or type of equipment to be embarked will require reevaluation.

Upon activation, cargo to be embarked aboard the T-AVB can then be sequenced to the pier for loading. Civilian cargo handlers can be provided by the MSC to load the ship or the ship can be loaded by MALS personnel. Upon receipt of a mission, the MAGTF commander will, through either deliberate planning or crisis planning functions, develop a course of action, force structure, and an echelon or phase order in which forces will arrive in the theater of operations. When the planning process is completed, task organization and organization of forces for deployment will commence. Deployment planning is based on the tactical requirements of operations and force time-phasing requirements. These requirements determine marshaling, staging, embarkation, and movement plans. It is during this time that the ACE task-organized FW/RW host MALS is designated, and preparation for deployment begins. The concepts and procedures used by the MALS support this task-organized and time-phased MAGTF deployment method.

Predeployment Logistics Actions

The following are the logistics actions that occur within FW/RW host and parent MALS during predeployment organization and preparation of AVLOG support.

The MALS of any MAG providing aircraft to the ACE (a parent MALS) will identify, prepare for shipment the support package requirements (FISP and PCSP) for the specific type of aircraft being provided, and transfer these support packages to the appropriate host MALS. This evolution is controlled and coordinated by the parent MALS operations department in conjunction with the MALS maintenance, supply, and ordnance departments. FISPs are transported to the operational area with deploying aircraft; the host MALS will not normally take custody of FISPs until arrival in the operational area.

The FW/RW host MALS will identify and prepare for shipment resident FISPs, CCSP, and PCSPs. It will receive support packages (FISPs, PCSPs) from the parent MALS and transfer resident support packages that are not required to a designated remain-behind MALS.

At this point, both the FW/RW host MALS will be logistically task-organized to support the composite ACE. They will be prepared for deployment with their command elements, appropriate support packages including the MWSS/MACG detachment, and their organic data processing facilities with logistic and inventory records properly configured. Upon completion of the above predeployment logistics action, information on lift requirements of the ACE logistics support organizations must be provided up line. This reporting will ensure that logistics support assets are accurately reflected in the master deployment and execution data of higher headquarters. This information is provided through MAGTF-LOGAIS.

Concept Development

This paragraph addresses the development of a concept of AVLOG support and demonstrates a method of how to approach concept development. Conceptual planning establishes goals, objectives, and broad schemes for achieving them. For the aviation logistician, conceptual planning means matching requirements (goals and objectives aligned to operational concept) to all available

resources and capabilities (broad logistics scheme). Initially, the planner will readily identify “predictable requirements” including aeronautical spare parts (based on historical usage data, deployed level of repair, pipeline times and safety levels), quantities of aircraft munitions (derived from aviation munitions expenditure formulas per sortie/mission), and bulk fuel (historical aircraft fuel hourly consumption rates). These predictable requirements to enable and sustain aircraft readiness make the initial aspects of AVLOG planning a quantitative drill. The predictive nature of logistics requirements planning is not the challenge in AVLOG concept development.

Beyond predictive analysis, AVLOG concept development is a creative blending of many ingredients against complex, situationally unique factors. The blending of these factors can take many forms in the development of an AVLOG

support concept, as there is no correct method to blend these and no technically precise final concept. The concept must encompass the full spectrum of AVLOG processes, procedures, systems, and activities and, concurrently, will be framed with risk and uncertainty. See figure 5-3.

The complexity of AVLOG concept development is best simplified when conducted within an organized framework or structured methodology, such as the sequential steps of the Marine Corps Planning Process (MCP), and is conducted in parallel with operational planning.

During concept development, aviation logisticians at the MEF, wing, and MALS must address both the tactical and operational levels of AVLOG support. The MEF planner seeks to assess the impact to tactical logistics that the operational support scheme will trigger while the

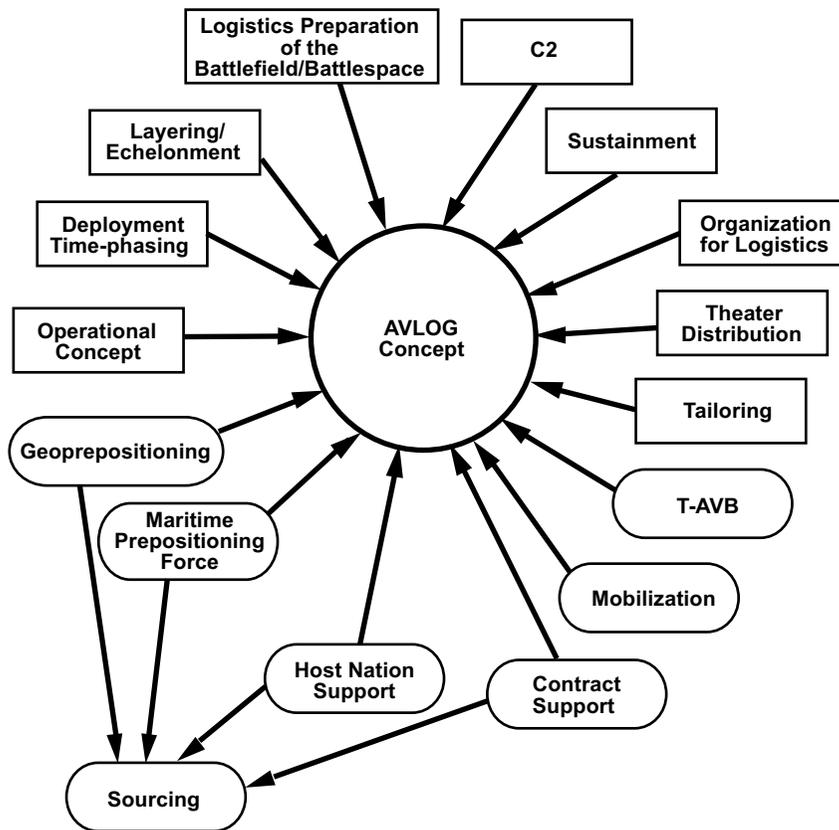


Figure 5-3. Aviation Logistics Considerations.

MALS planner should understand the role of the MALS in the operational context. The MALS planner is oftentimes the operational logistician for the MAGTF ACE, therefore it is imperative that the MALS operations officer has knowledge of operational level logistics planning. These levels of logistics planning include force deployment planning, sustainment planning, and serving as the foundation for subsequent detailed and functional logistics planning.

Concept Development Process

The development of the AVLOG support concept should begin as early in the planning process as feasible. For example, it can begin when an AVLOG planner participates in the MAGTF or MEF level operational planning team as a subject matter expert. The AVLOG planner should aim to match all AVLOG deployment and sustainment activities with the requirements of the operating forces of the MAGTF ACE. By participating in the early stages of the planning process, at both the MAGTF and ACE levels, the aviation logistician gains relevance and credibility with the operational planners, obtains situational awareness, and is able to compile realistic data to support deliberate or time-sensitive planning requirements.

Mission Analysis

The mission for AVLOG should be derived from the higher command's mission, the ACE mission statement, and the ACE commander's intent. For AVLOG to be a force multiplier to the ACE, the planner should derive from the commander's vision a strength for AVLOG in support of the ACE employment concept and an AVLOG main effort. The strength from a logistics perspective will be the aspect of logistics that best enables the combat capability that is the focus of effort within the operational course of action (COA). For example, the AVLOG strength could be the theater-operational-level flexibility gained from the opera-

tional employment of the T-AVB or it could be the rapid force closure with immediate sustainment of RESP. By the same token, the AVLOG planner should also seek the MAGTF ACE's own weakness/critical vulnerability. The planner should then ask, "how vulnerable are our own strengths?" For example, "will our own ASP become a large and lucrative target for the enemy?" Our own weaknesses (or critical vulnerabilities) may be the constraint of in-theater throughput (port/airfield), the beddown plan or rear area security for our AVLOG sites. The result of asking these questions and after analysis of higher and supported commands' missions and intent will form the framework for the mission in support of the ACE in particular and the MAGTF as a whole.

Concept Development

The AVLOG support concept(s) must first focus on the COAs that are formulated by the operational planning team (OPT) and operational planners. Logistics planning should parallel operational planning/COA development. At this stage, the AVLOG planner will develop an initial support concept for each COA based on initial estimate(s) and detailed estimate of supportability. Detailed support planning, which adds depth and fidelity to the initial concept, occurs only after the commander selects a final COA.

To support each COA, an AVLOG support concept is designed. No prescribed set of rules or preferred methodology exists that is commonly used to form the "AVLOG concept of support." Following is a model that ensures a minimum set of key "conceptual planning considerations" are employed in the thought process, and an evaluation process is injected that uses a measure of effectiveness or success criteria. The success criteria used in this model are the principles of logistics. The tool to assist the AVLOG planner in formulating and evaluating the logistics concept is the AVLOG support concept matrix. See appendix A.

Concept Planning Considerations

The following planning considerations should be viewed as a system of factors. Excessive focus on any one element can cause suboptimization at the cost of others and degrade the entire logistics system that will be put in place for theater-wide ALS.

Deployment Time-Phasing

This first consideration asks, “what elements of AVLOG will be required to enable the initial aviation combat capability?” This is the force deployment planning aspect of FDP&E. For AVLOG FDP&E, MALSP greatly facilitates this process, but does not provide the total AVLOG solution. By establishing the deployed AVLOG requirements with associated required delivery date in the operational concept, reverse planning methodology will step the planner sequentially backward through all the required activities/events that must be accomplished to close the required elements where and when needed. For example, to enable 16 AV-8Bs to begin surge flight operations on day C+10, the AVLOG planner would define the requirement to

enable sorties, and then plan backwards through a sequence of events. In addition to the MALSP packages, aviation munitions and georepositioning flows to marry up with FISP/RESPs may have to be planned to arrive at the forward operating base. Events that must occur include the deployment of the offload preparation party to prepare georepositioned equipment. See figure 5-4.

To enable a deployed MALS to arrive in theater via T-AVB by C+35 requires extensive and detailed reverse planning that will manifest event time windows. Planning backward, the AVLOG planner will discover a point at which the deploying MALS will have to completely shut down support activities. Stand down of the MALS in preparation for embarkation will have to be closely scrutinized and coordinated due to an anticipated last minute surge of squadron support maintenance requirements. A premature loss of critical maintenance capabilities at this juncture will be detrimental to the overall success of the ACE mount out. By ensuring that there are no unusual requirements for MALS support beyond identified

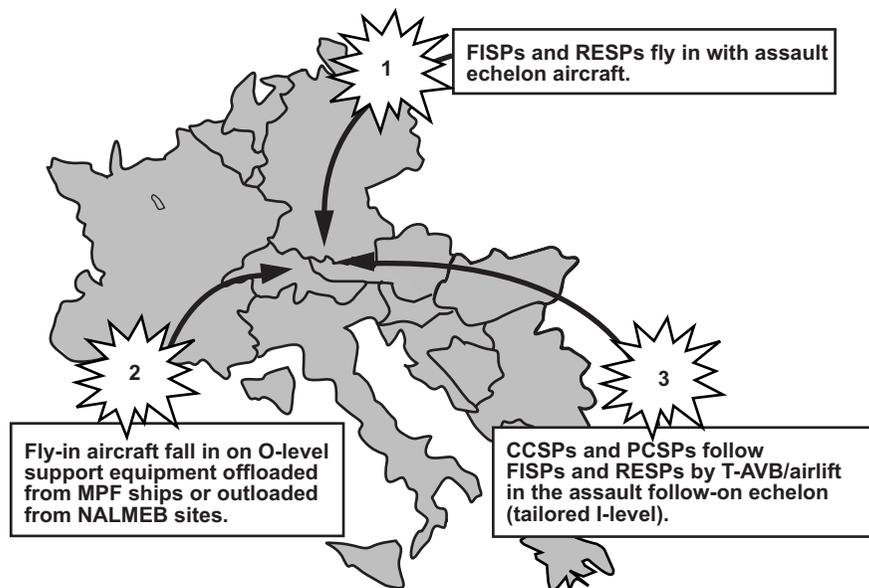


Figure 5-4. Aviation Logistics Deployment Time-Phasing.

aircraft assembly repairs, the MALS will have an identifiable milestone as to when and what degree support activities may shut down.

The disposition of assets that are held in the MALS repair cycle must be determined early on in the embarkation process. A cutoff date for component maintenance actions must be determined as soon as possible following the announced warning order. Maintenance activities must coordinate closely with supply to ensure the orderly return of awaiting parts components from the various divisions. All in-work/awaiting maintenance components should be embarked and extreme care must be exercised by the MALS to ensure components are reassembled to their fullest extent possible and all appropriate documentation is securely attached. See figure 5-5.

Shut down of the MALS in preparation for embarkation must be closely coordinated. Sufficient time must be allocated for the disassembly of the MF complex, pack up of embark boxes and movement to the seaport of embarkation/aerial port of embarkation. Dismantling of the MALS must be sequenced to ensure continued AVLOG support is available for aircraft squadrons. This is especially critical due to a likely surge effort as supported squadrons prepare to deploy. This will require close coordination among the various MALS squadrons that will be embarking aboard the T-AVB, coordination internal to each MALS, and coordination with each of the deploying/

supported squadrons. Each MALS must continue to support the deploying squadrons until the time they have actually embarked.

The successful end state of the first planning consideration is force closure. Force closure occurs when a supported commander determines that sufficient personnel and equipment are in the assigned area of operations to carry out assigned tasks.

Layering

This consideration asks the question “how much capability is critical forward versus what can economically remain consolidated well removed from the combat airfields?” The forward versus rear support dilemma is primarily a question of needed maintenance capability that can feasibly be deployed forward. Maintenance capabilities are contained in three levels: organizational, intermediate, and depot; however, this planning consideration is concerned with the I-level.

The layer needed nearest to the flightline is what is used to service aircraft, maintain aircraft operations, handle and load munitions (FISP and RESP). While it is preferred to have the PCSPs and CCSPs at the same operating base, it may not always be feasible. For example, there may be more than one FW base requiring support from only a single site CCSP/PCSP deployed MALS. The next layer of support, the PCSPs and CCSPs,

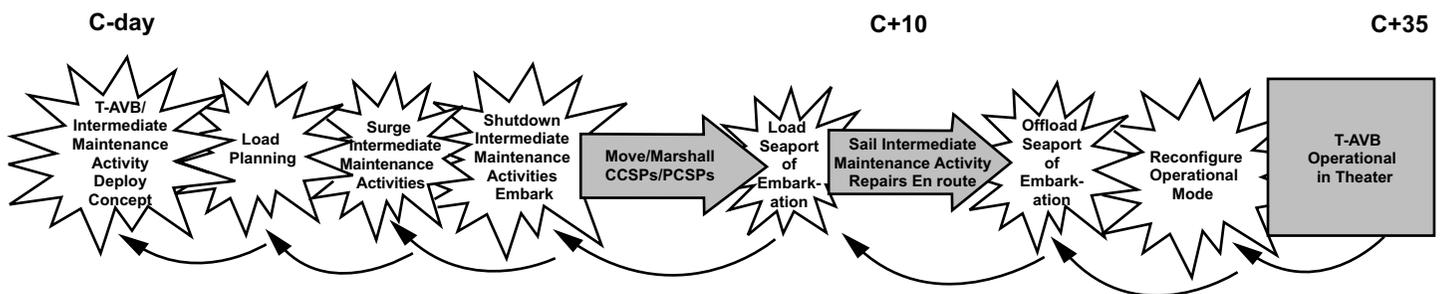


Figure 5-5. Aviation Logistics Reverse Planning.

may operate at a rear and centralized position removed from the outlying operating sites, providing a more in-depth degree of CCSP/PCSP MALS repair and enabling sustainment to the RESP/FISP.

After the CSPs, the support concept would identify follow-on requirements; i.e., FOSP and/or in-theater facilities to augment increased I- to D-level repair capabilities; i.e, first degree engine repair. Finally, the furthest removed layer of support is the out-of-theater that must flow through the strategic transportation channels. Sources of support in this layer are the rear elements of the home-based MALS, the industrial and depot facilities, and commercial repair sites See figure 5-6.

The forward-versus-rear dilemma is marked by a series of trade-offs. While it may seem desirable to place maximum capability near supported aircraft

in terms of support responsiveness, it will not be feasible in terms of strategic lift. A constant analysis must be made as to depth of spares versus repair capability brought forward. The more expeditionary (the lighter) the logistics capability, the more reliant the logistics concept becomes on either a layered solution or one that relies heavily upon the strategic logistics pipeline.

Strategic Logistics Pipeline

The next consideration is the channel for both replenishments and retrogrades into and out of the deployment theater. The flow of logistics support to the operating forces has often been depicted as a flow through a pipeline channeling support from sources (most commonly continental United States-based), through nodes (bases, stock points, sites, etc.), to the end user (forces). Personnel and

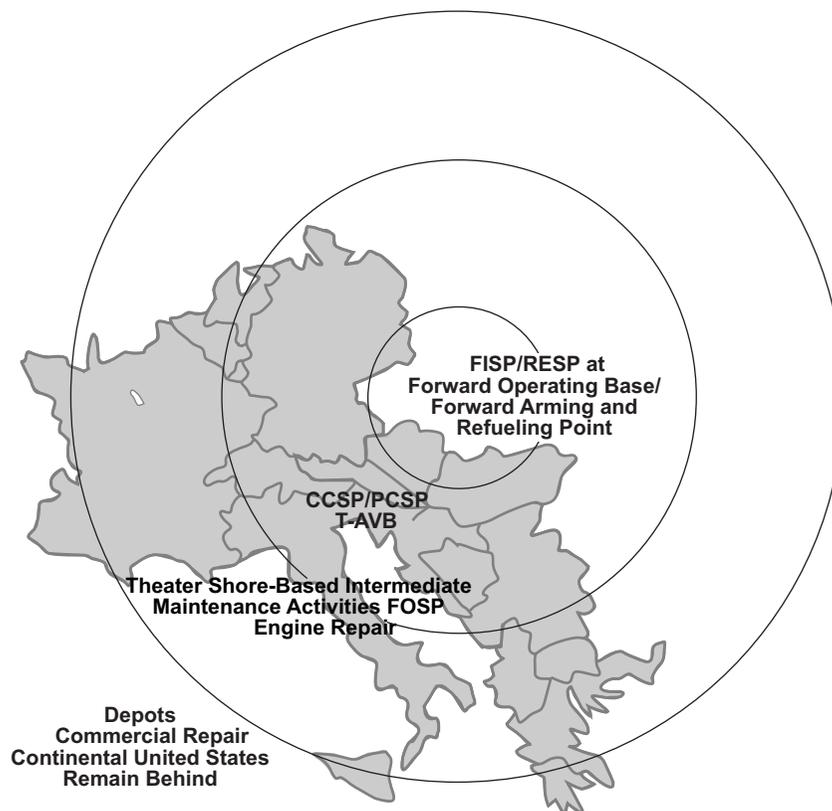


Figure 5-6. Aviation Logistics Layering.

materiel flow into seaports of embarkation/aerial ports of embarkation via strategic lift. This strategic phase of transportation/distribution ends at seaport of debarkation/aerial port of debarkation in the theater. See figure 5-7.

Transportation modes for the pipelines are selected based on mission-need capability, transportation priority, regulatory restrictions, and available capacity. Regulatory restrictions include transportation and storage issues such as hazardous materials regulations, security and custody issues such as registered mail regulations, and customs clearance requirements. Strategic transportation choices include a range of military and commercial options, both foreign and domestic. Nodes and bottlenecks must be identified in the strategic and inter-theater transportation channels and consideration of placing MALS supply detachment(s) and other capabilities at certain points along the transportation channels (main and alternates should be identified) to alleviate bottlenecks.

Retrograde requires a reversal of the flow through the network and involves the same considerations, participants, and resources. Consideration must be given to alternate routing of retrograde; however, as the actual flow may progress via en route repair sites that may serve as designated repair points. In-transit visibility is vital to managing the logistics

flow, and supports decisions on either end, and in both directions of the pipeline.

Tailoring

Despite the standardization of the MALSP CSPs, some degree of tailoring will be required to best match support to the operational employment scenario. Factors that will influence tailoring decisions are lift constraints, immediate force closure requirements, and alternate sourcing of capabilities. While the FISP, PCSP, and CCSP are rarely tailored, the RESP and FOSP would more likely be tailored. The tailoring of the RESP is determined by the immediate SE needs during the first 30 days of support (RESP assumes that prepositioned SE is not available) and strategic airlift constraint. Similar tailoring decisions are made with the FOSP when planning MALS requirements beyond the 90-day sustainment mark.

Tailoring decisions are also made in the deployment of the MALS when task-organized to support the MAGTF ACE. The transfer of PCSPs between parent and host MALS will assist in tailoring the forward-deploying MALS; however, other questions must be answered in the transfer process. These issues include transfer(s) of financial accounts between MALS, the tailoring of T/O and T/E for the T-AVB embarkation, the designation of

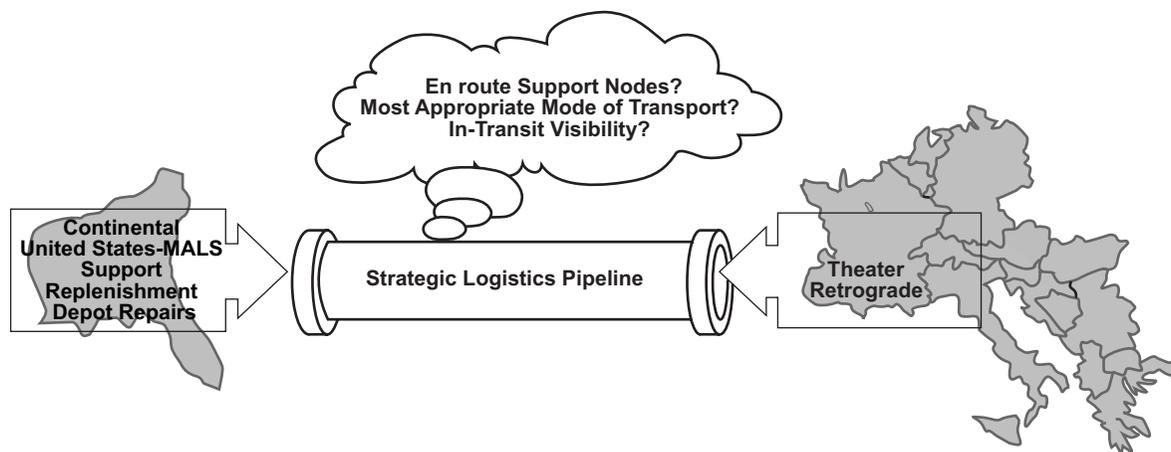


Figure 5-7. AVLOG Strategic Pipeline.

forward and rear command elements, reserve augmentation, etc.

MALSP aims to reduce, if not eliminate altogether, the need for tailoring and simplifies the transfer process between deploying and providing MALS. Even with MALSP there will always be a need to plan for nonstandard solutions in deliberate and in time-sensitive situations; the AVLOG planner should always be able to improvise in unique, fast-moving, and constrained situations. Likewise, the AVLOG planner should equally be able to assess the costs of tailoring.

Physical Network Analysis

Physical network analysis links intelligence preparation of the battlespace process, logistics analysis, and commander's intent to develop an AVLOG concept of support. Some of the commander's critical information requirements needed to develop a COA may be logistics-oriented information requirements, such as throughput at a key node. A physical network analysis is a complete assessment of the theater for key aspects and features that are crucial in the overall logistics support concept. These key aspects and features include:

- The aerial ports of debarkation and seaports of debarkation, main/secondary lines of communications, and main supply routes.
- Aircraft beddown sites and operating airfield capabilities.
- Theater distribution factors.
- Resource availability.
- Basing rights.
- Staging areas.
- Real estate requirements.
- Security concerns and force protection.

Gaining situational awareness should include time-space-distance assessments unique to the theater and to supporting the operational concept. A well-developed physical network analysis will make use of all available information sources from the S-2/G-2, theater logistics representatives, and secure

Internet homepages. While physical network analysis should be one of the first actions/considerations in the planning process, after a detailed estimate of supportability, it will most directly affect the next consideration—theater distribution.

Theater Distribution

Theater (or intratheater) distribution is the flow of personnel, equipment, and materiel within the theater of operation that enables the MAGTF ACE to accomplish its tactical missions. Essentially, it entails plugging into or establishing an effective logistics system, supporting the arrival and assembly of personnel and equipment as they reach an AO, and enabling sustainment activities for the duration of employment. The MAGTF ACE, through the naval theater logistics agent and the MEF combat service support element, will join, establish, and/or modify the theater distribution system to sustain the MAGTF ACE. Theater distribution must plan for and support both replenishment support and retrograde evacuation. Lessons learned from past deployments indicate that the weak point of the AVLOG support concept has been theater distribution support during retrograde evacuation.

The theater distribution occurs via the physical network and resource elements of the logistics system. The physical network of the distribution system consists of the quantity, capacity, and capability of fixed structures and established facilities available to support distribution operations. It includes roads, airfields, railroads, hardened structures (such as warehouses or storage facilities), seaports, inland waterways, and pipelines. All facilities will be considered for use in the logistics system. Those identified for use become designated as installations. Those not chosen provide options and flexibility if required.

The resource elements of the logistics system consist of the personnel (uniformed and civilian, host nation, government, military, and contractor), organizations, materiel, and equipment operating

within the physical network of the logistics system. Intratheater lift is the sum of all modes of transportation in a theater of war available to move, sustain, and redeploy the MAGTF ACE. It consists of the trucks, busses, trains, aircraft, pipelines, ships, lighterage, and ferries.

Class V(A) receipt, storage, and onward movement within the theater is viewed as a major concern for the ground logisticians unfamiliar with handling class V(A). It is imperative to address in the distribution plan where to position subject matter experts as expeditors within tactical assembly areas and within the theater main throughput nodes to ensure class V (A) is properly handled to effectively sustain the ACE.

Sourcing

The AVLOG planner must seek all possible sources of support. Almost certain constraints (limited strategic lift), and/or equipment shortfalls may dictate the need to access alternate sources. Sources that must be planned include the following:

- Prepositioned equipment and supplies (MPF, NALMEB).
- Prepositioned WRM.
- In-theater capabilities (Navy afloat aviation support activities, shore-based overseas aviation support activities).
- Cross-service support.
- Contract support.
- Host nation support.

The AVLOG planner must emphasize to the supported squadrons that prepositioning will be a primary source for SE and confidence must be gained in the use of these resources. Planning must place greater emphasis on the use of host nation, allied, coalition partner or other foreign support. Civilian contractors (domestic and foreign) directly provide support previously only accomplished by the Military Services. The difficult task of sourcing preferred munitions needed to support

the ACE will be solved largely from in-theater Navy prepositioned WRM stock and float ammunition resupply vessels.

Organization for Logistics in Theater

As many of the above planning considerations are developed, the organization for AVLOG support in the theater will begin to take form. The in-theater organization for logistics will identify the following:

- Number of MALS sites required.
- Make-up of each MALS site.
- Lead MALS.
- Employment concept for the T-AVB.
- Establishment of a central MALS hub.
- Requirement for in-theater MALS detachments.
- Use of Navy in-theater station and afloat bases.

The logistics system will begin to take shape as the beddown plan is finalized, the operational scheme and combat focus of effort is identified, the physical network analysis completed and in-theater capabilities discovered, and other available sources of support/resources are identified.

A key trade-off in this consideration is how centralized versus decentralized the in-theater organization should be, with C2 and dispersal of resources being weighted factors in this decision. Control for in-theater AVLOG distribution should be centralized while economies of scale may drive to consolidated MALS hub concept for certain component repairs. Theater organization may look different for different functions/commodities within the AVLOG support concept. For example, the flow for requisitioning via different supply ports of entry, the flow of retrograde, and the flow of replenishments may look far different for different types of end items.

The overall organization for AVLOG must emphasize the systems approach to the concept development design, blending all resources and available capabilities to provide the most effective and economical (in terms of constraints) solution.

Command and Control

Consideration of C2 for AVLOG requires detailed command relations and which AISs are used. Command relations must be clearly defined when forward and rear designations are given to deploying MALS, as the MALS are task-organized and assigned in support of a newly formed MAGTF ACE. AVLOG elements may also detach from the parent MALS and deploy afloat. These elements will normally report to the afloat MAGTF commander who reports to the Navy numbered fleet commander. Command relations must also be clearly defined as a host MALS will task-organize and embark aboard the T-AVB, and as the ship arrives into the theater/combatant commander's area of responsibility.

A variety of communications systems can be employed alone or together to facilitate AVLOG support and C2. These include but are not limited to the following: nonsecure internet protocol router network, SALTS, INMARSAT, and NTCSS replication facility. Together, these systems give each MALS organic reach forward/back capability in the continental United States, afloat (T-AVB), and forward deployed. This organic communications capability is key to transmitting logistics data to continental United States-based Navy logistics nodes/resupply points.

T-AVB Employment Concept

Consideration of the mode of employing the T-AVB is central to the overall AVLOG concept. Recall that the three modes of T-AVB employment are transport, operational, and combination. The pros and cons of each can be matched to the MAGTF and ACE's concept of operations and concept of support. Consideration of the T-AVB must begin with the support posture in-theater and how best the T-AVB fits into the theater-support organization (the logistics system). This primary concern must then be tempered by the fact that T-AVB is the most effective and economical means for transporting a major portion of potentially deploying MALS PCSPs

for an entire MAW. The T-AVB may be the best/only opportunity to move PCSPs to the theater. Next, ask how the T-AVB is employed in theater: pier-side as operational, located near a shore-based IMA or afloat in limited operational mode for a limited mix of aircraft systems.

Available employment options are abundant, but the decision must be made early (backward planning shows that key events are imminent). Option trade-offs must be understood; for example, full transport mode equals a 20- to 30-day blackhole of no repair capability from all embarked MALS work centers—too costly a risk to take in near-term operations.

Sustainment Concept

The overall sustainment concept must be a consideration in the plan. Typically, aviation logisticians think in terms of pull sustainment and resupply (as MALS end-users requisitioning from the Navy supply system) because each MALS brings reach-back and organic requisitioning capability with the CCSPs (in some cases with RESP). However, consideration must be given to push sustainment for certain items and groups of commodities. For example, in the case of aviation munitions sustainment, a push concept from the theater Navy combatant commander may be the best solution since he has better visibility of theater-wide expenditures and requirements and worldwide asset availability. The push of sourced munitions will be based on the overall requirements matched to a reported daily expenditure rate.

The sustainment concept will also address long-term planning considerations beyond the initial 90-day depth of spares contained within the CSPs; for example, FOSP requirement/flow, follow-on missions for T-AVB, support for branches/sequels in the overall operational scheme of maneuver, and analysis of retrograde flow to feed depot/commercial repairs needed to sustain a long-term spares posture. Self-sufficiency and dependency on external sources may also be considered within sustainment planning,

as the question asked is, “how dependent is the AVLOG concept on external support?” For example, how much reliance is placed on the force service support group for aviation ordnance handling and throughput in the theater.

Mobilization

The requirement to activate Reserves may become a key component of the AVLOG concept. Reserves can back-fill MALS home stations, manage remain-behind equipment, support the fleet replacement squadrons while managing the TSAs, and augment forces in theater. The mobilization of Reserves is a complex planning process. Understanding mobilization begins with knowledge of command relations of Reserves, the role of the supporting bases and stations (Commander, Marine Corps air bases) and CG 4th MAW, and the concepts described in the Marine Corps Mobilization Management Plan.

Concept Comparison/Wargaming and Selection

These steps are considered together. In mission analysis, the support concept(s) that have been initially designed are only to the degree of detail that parallels the operational COAs. Subsequent concept comparison and wargaming of the AVLOG concepts will be conducted in parallel or as part of the COA comparison and wargaming. More likely, the AVLOG concept(s) will be used as estimates of supportability for each COA. Selection of the final AVLOG support concept will occur as the final COA is selected.

To assist in AVLOG concept comparison and selection, the principles of logistics provide a superb means of evaluation. Comparing the principles to the considerations discussed above provides the planner a good model to objectively assess the planned concept.

Orders Development

The outputs of all the proceeding work and deliberations are formalized and the OPORD or OPLAN is produced. Published in JOPES format, the OPORD contains the supported ACE basic mission, intent, and guidance. Included will be several key annexes, such as annex A, the task organization that will define command relations. Annex D is logistics and the AVLOG concept of support will be an appendix to annex D. Detailed and functional planning must be included into the AVLOG appendix. Functional experts (maintenance officer, avionics officer, aviation ordnance officer, and aviation supply officer) incorporate their own schemes of support as a portion of the overall concept. With sufficient detail, the functional inputs may in fact become a self-contained tab to the appendix.

Transition

Transition is the handoff of the battle plan to the units who will execute the plan. If a plan is written, it now is translated to an OPORD. A formal deployment order will be published that directs deployment and deployment support operations. In FDP&E, transition is where planning ends and execution begins with plan/TPFDD validation, movement, and actual sourcing.

At the tactical level, successful transition depends on the level of detail contained within the OPORD and the OPORD’s accuracy and currency. Deployment checklists, as detailed as individual preparedness checklists and work-center embarkation manifests, will drive milestones dates and times that have been determined through reverse planning the force closure. For the MALS, the operations department may identify a deployment control cell/crisis center that will control and monitor the MALS movement and support posture throughout plan execution.

APPENDIX A

AVIATION LOGISTICS SUPPORT CONCEPT MATRIX

Concept Development	Evaluation Criteria			
Planning Consideration	Simple	Flexible	Responsive	Integrated With Operations
Deployment Time-Phasing				
Layering				
Tailoring				
Theater Distribution				
Sourcing				
Physical Network Analysis				
Logistics Grid/Pipeline (Installations)				
Task Organization for Support				
AVLOG Command and Control (Mission Assignments)				
T-AVB Employment Concept				
Sustainment Concept				
Mobilization				
<p>This matrix demonstrates how planners could compare each planning consideration to the principles of logistics or other measures of effectiveness that the commander deems most crucial. If several concepts are being compared, the table can be used to assist in comparison. The approved AVLOG concept of support can be improved when evaluated with the use of the matrix.</p>				

APPENDIX B

GLOSSARY

AAE	aircraft armament equipment	CNO	Chief of Naval Operations
ACE	aviation combat element	CO	commanding officer
AC/S	assistant chief of staff	COA	course of action
ADP	automated data processing	COMMARFOR	Commander, Marine Corps Forces
AFOE	assault follow-on echelon	COMMARFORLANT	Commander, Marine Corps Forces, Atlantic
AGS	aviation ground support	COMMARFORPAC	Commander, Marine Corps Forces, Pacific
AIMD	aircraft intermediate maintenance department	COMNAVAIRLANT	Commander, Naval Air Force, Atlantic
AIS	automated information systems	COMNAVAIRPAC	Commander, Naval Air Force, Pacific
AISD	aviation information systems department	COMNAVSEASYSYSCOM	Commander, Naval Sea Systems Command
AIT	automated information technology	COMNAVSUPSYSCOM	Commander, Naval Supply Systems Command
AITS	ammunition inventory tracking system	COMSPAWARSYSCOM	Commander, Space and Naval Warfare Systems Command
ALD	aviation logistics department	CONPLAN	contingency plan
ALS	aviation logistics support	COSAL	consolidated shipboard allowance list
AMC	Air Mobility Command	CRAF	Civil Reserve Air Fleet
AMMRL	aircraft maintenance material readiness list	CSP	contingency support package
AO	area of operations	CSS	combat service support
APML	assistant program manager for logistics	CV	aircraft carrier
ARFF	aircraft rescue and firefighting	CVN	aircraft carrier (nuclear)
ASD	aviation supply department	D-level	depot-level
ASL	Aviation Logistics Support Branch	DC/A	Deputy Commandant for Aviation
ATLASS	asset tracking logistics and supply system	DOD	Department of Defense
AUTOSERD	automated support equipment recommendation data	DODD	Department of Defense Directive
AVCAL	aviation consolidated allowance list	DON	Department of the Navy
AVLOG	aviation logistics	DTO	direct turn-over
AVNSUPO	aviation supply officer		
AWSE	armament weapons support equipment		
C2	command and control		
C4I	command, control, communications, computers, and intelligence		
CAEMS	computer-aided embarkation management system		
CAIMS	conventional ammunition integrated management system		
CALM	circumpolar active layer monitoring		
CAP	crisis action planning		
CCSP	common contingency support package		
CG	commanding general		
CMC	Commandant of the Marine Corps		

EAF.....	expeditionary airfield	MARFORLANT..	Marine Corps Forces Atlantic
FAADC.....	fleet accounting and disbursing center	MARFORPAC	Marine Corps Forces Pacific
FDP&E	force deployment planning and execution	MAW	Marine aircraft wing
FE	facility equipment	MCPP	Marine Corps Planning Process
FIE	fly-in echelon	MCWP . . .	Marine Corps warfighting publication
FISP	fly-in support package	MDDS II.....	MAGTF Deployment Support System II
FOSP.....	follow-on support package	MDL	MAGTF Data Library
FW	fixed-wing	MDS	maintenance data system
FWST	fleet weapons support team	MEB	Marine Expeditionary Brigade
GTN	global transportation network	MEF	Marine Expeditionary Force
HQ.....	headquarters	MEU	Marine Expeditionary Unit
HQMC	Headquarters, Marine Corps	MEU(SOC).....	Marine Expeditionary Unit special operations capable
I-level	intermediate-level	MF.....	mobile facility
IBS	integrated bar code system	MILSTAMP ..	Military Shipping Transportation and Management Program
ILSP	integrated logistic support plan	MNS	mission needs statement
IMA.....	Intermediate Maintenance Activity	MPF	maritime prepositioning force
IMRL	individual material readiness list	MPS	maritime prepositioning ship
INMARSAT	international maritime satellite	MPSRON	maritime prepositioning ships squadron
JCS	Joint Chiefs of Staff	MRMS	Maintenance Resource Management System
JOPEs.....	Joint Operation Planning and Execution System	MSC	Military Sealift Command
JROC.	Joint Requirements Oversight Council	MWSG	Marine wing support group
JTF	joint task force	MWSS.....	Marine wing support squadron
LHA	amphibious assault ship (general purpose)	NALC	Naval Ammunition Logistics Center
LHD	amphibious assault ship (multipurpose)	NALCOMIS	Naval Aviation Logistics Command Management Information System
LM	logistics manager	NALMEB	Norway Air-Landed Marine Expeditionary Brigade
LOGAIS	logistics automated information system	NAMP.	Naval Aviation Maintenance Program
LPD.....	amphibious transport dock	NATO.....	North Atlantic Treaty Organization
MACG	Marine air control group	NAVAIRINST	Naval Air Systems Command Instruction
MAF	maintenance action form	NAVAIRSYSCOM	Naval Air Systems Command
MAG.....	Marine aircraft group	NAVICP	naval inventory control point
MAGTF	Marine air-ground task force	NAVSEASYSYSCOM	Naval Sea Systems Command
MALS.....	Marine aviation logistics squadron	NAVSUPSYSCOM	Naval Supply Systems Command
MALSP.....	Marine Aviation Logistics Support Program	NCEA	noncombat expenditure allocation
MARFOR	Marine Corps Forces	NNOR.....	nonnuclear ordnance requirement

NSN	National Stock Number	SERD	support equipment recommendation data
NTCSS	Naval Tactical Command Support System	SNAP	Shipboard Nontactical Automated Data Processing Program
NWCF	Navy Working Capital Fund	SOP	standing operating procedure
O-level	organizational-level	SPAWARSCOM	Space and Naval Warfare Systems Command
OPCON	operational control	SUADPS-RT	Shipboard Uniform Automated Data Processing System-Real Time
OPLAN	operation plan	TALPS	T-AVB Automated Load Planning System
OPNAV	Office of the Chief of Naval Operations	T-AVB	aviation logistics support ship
OPNAVINST	Chief of Naval Operations Instruction	TBA	table of basic allowance
OPORD	operation order	TC-AIMS	Transportation Coordinator's Automated Information for Movement System
OPT	operational planning team	TCMD	transportation control and movement document
OPTAR	operating target	TD	technical directive
PCSP	peculiar contingency support package	T/E	table of equipment
PPD	program planning document	T/M/S	type/model/series
PRG	Program Review Group	T/O	table of organization
RCM	reliability-centered maintenance	3M	maintenance, management, and materiel
RESP	remote expeditionary support package	TPFDD	time-phased force and deployment data
ROLMS	Retail Ordnance Logistics Management System	TSA	training squadron allowance
RSOI	reception, staging, onward movement, and integration	TYCOM	type commander
RW	rotary-wing	WRM	war reserve materiel
SAC	special accounting class	WSPD	weapons system planning document
SALTS	streamlined automated logistics transmission system		
SE	support equipment		
SECNAVINST	Secretary of the Navy Instruction		

APPENDIX C

REFERENCES

Secretary of the Navy Instruction (SECNAVINST)

5510.36 Department of the Navy (DON) Information Security Program Regulation

Chief of Naval Operations Instructions (OPNAVINSTs)

4790.2H The Naval Aviation Maintenance Program (NAMP)
5218.7B Navy Official Mail Management Instructions
8000.16A Naval Ordnance Maintenance Management Program (NOMMP)

Naval Air Systems Command Instruction (NAVAIRINST)

5230.11 Fleet Aviation Logistics Information Systems Functional Management Manual

Navy Support Instruction (NAVSUPINST)

P-724 Conventional Ordnance Stockpile Management Policies and Procedures Manual

Marine Corps Warfighting Publications (MCWPs)

3-21.1 Aviation Ground Support
5-1 Marine Corps Planning Process
5-11.1 MAGTF Aviation Planning

Miscellaneous

NAVSEA OP 5 Vol III Ammunition and Explosives Ashore, Advance Bases